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# Swipe Right?: Experimental Analyses of App-Based Dating in the Age of Criminal Stigma

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## ABSTRACT

Stigma associated with prior incarceration could make dating difficult. To test this in online dating, an experimental audit used constructed dating app profiles of Black, Latinx, and White males and females. Experimental and control profiles were identical with the exception of a parole disclosure statement in bios of experimental profiles. Surprisingly, the White female profile disclosing parole was the only one to match with significantly fewer users. We analyzed the racial congruence of matches and found that White parole disclosing profiles were more likely to attract White users and Black and Latinx profiles attracted more heterogeneous users regardless of parole disclosure. The interaction between racial and criminal stigma and implications for relationship prospects among the formerly incarcerated are considered. Although the timing of criminal history disclosure matters, criminal stigma is unique in app-based dating, having more negative effects for Whites, which differs from other social domains.

## KEYWORDS

Criminal stigma; experiment; online dating; app-based dating; parole; race

## Introduction

The stigma of a criminal record diminishes the opportunities available to convicted and formerly incarcerated individuals. Much research has addressed the obstacles to reintegration that a criminal record creates. This population faces adversity in important social arenas, such as employment (Pager, 2003; Uggen et al., 2014), housing (Evans & Porter, 2015), higher education (Evans, Szkola et al., 2019; Stewart & Uggen, 2020), and enfranchisement (Uggen et al., 2006). Up until now, scholars have focused less attention on the potential impact of criminal justice contact on the willingness of others to meet, socialize, and/or date a criminally stigmatized individual. Though prosocial romantic relationships offer social support that can act as a crucial turning point in ex-offenders' reintegration (Colvin et al., 2002), research suggests incarceration strains current relationships with family members, friends, and significant others (Comfort et al., 2005). Though criminal stigma may play a lesser role in the dissolution of prior existing relationships (e.g., Leverentz, 2006; Massoglia et al., 2011), we expect that stigma might hinder the ability of formerly incarcerated individuals to connect with new friends and romantic partners.

A wide body of research has addressed the impact that marriage has on desistance from crime (Bersani et al., 2009; Doherty & Ensminger, 2013; Laub et al., 1998; McGloin et al.,

2011; Sampson & Laub, 1995; Sampson et al., 2006; Wyse et al., 2014). Although prior research has considered how marriage affects the reintegration and recidivism of those criminally convicted, research has only begun to explore how dating and sexual relationships may be hindered by criminal justice system involvement. This study explores how prospective romantic partners react to disclosure of current parole status using an experimental audit design. App-based dating is used as the study site because it is an increasingly popular means of meeting prospective dating partners (Rosenfeld, 2017). This builds on prior research on app-based dating (e.g., Jung et al., 2019; Evans, 2019; Evans & Vega, 2020) but with important methodological modifications. Through use of a field experiment, this study measures how disclosing active parole status – an indicator of prior incarceration and criminal justice system contact – affects the ability of young adults to connect with users of various dating apps. Sex (male or female) and race (Black, White, Latinx) were manipulated to explore how visible demographic factors interact with parole disclosure to affect dating app outcomes. This study addresses an important gap – whether app-based daters are willing to virtually connect with someone who reveals active criminal justice supervision. Indeed, as Lewis (2016) notes, “mating patterns reflect the extent to which individuals from different backgrounds accept each other as equals” (p. 283) and those marginalized at the dating stage face severe restrictions in their ability to integrate into larger social networks.

### ***Criminal stigma***

While its exact definition is contentious, stigma may be understood as a state of devaluation based on an individual's association with some socially undesired “mark,” “condition,” or “status” (see Goffman, 1963; Pescosolido & Martin, 2015). Measuring criminal stigma has presented challenges, but criminal justice scholars have more recently grown the literature on the effects of criminal record stigma during the reentry process. Research has considered the effects of criminal stigma on employment prospects (Pager, 2003), housing outcomes (Furst & Evans, 2017; Evans, 2016; Evans, Blount-Hill et al., 2019), college admission (Custer, 2016), and the ability to vote (Uggen et al., 2006), but limited research has addressed how a criminal conviction or incarceration affects the ability to initiate dating relationships. Experiencing incarceration enhances the difficulty of developing new social relationships, but also damages existing relationships (Huebner, 2007). Because little research exists on criminal stigma and relationship prospects, studies on the impact of stigma on current relationships provides clues. The few studies that have explored the effect of criminal stigma on romantic relationships come from the Netherlands (Beijers et al., 2016; Zoutewelle-Terovan et al., 2016). The probability of a romantic or cohabiting relationship decreases with each prior offense committed (Zoutewelle-Terovan et al., 2016). This relationship is stronger for females. Contrastingly, current violent offending augmented relationship termination but only for males. Stigmatization depends on the nature of the offense, and offense type not only affects relationship capital but also relationship dissolution. A history of violent or sexual offenses appears to be more detrimental to relationship prospects than lower-level offenses (Zoutewelle-Terovan et al., 2016). People convicted of sexual offenses, for instance, experience heightened stigma compared to those convicted of most nonviolent offenses, which could explain why sex offenders are the least attractive relationship partners (Beijers et al., 2016; Evans, 2012). Domestic violence offenses, if known, may

also reduce relationship prospects. Attractiveness may mitigate the criminal record stigma, especially for women (Zoutewelle-Terovan et al., 2016). Individuals are equally willing to cohabit with prior violent and property offenders, but violent male offenders were perceived as less attractive than violent female offenders (Beijers et al., 2016). Although prior offense type can attenuate or exacerbate it, criminal stigma in American society has negative effects on reentry that may also extend to relationship initiation.

A crucial distinction between access to social relationships and other valuable reentry resources (e.g., housing, employment, bank loans) is that relationship initiation does not depend on a successful criminal background check. However, people can “screen” their current or potential partners using online search engines or by paying a fee to a private company for an online criminal record check.<sup>1</sup> Despite online records being faulty and some websites not being updated consistently, 15% of American adults surveyed indicated they had conducted an online search for someone’s criminal history (Lageson, 2016; Lageson et al., 2019). While many employers, landlords, and colleges seek indications of successful work history, financial solvency, or high school completion, sexual attraction plays a prominent role in the initiation of romantic relationships. Recent social psychological research defines interpersonal attraction as “a person’s immediate and positive affective and/or behavioral response to a specific individual” (Montoya & Horton, 2014, p. 60). Applying the audit design to dating apps offers a method for measuring how attraction is affected by disclosure of criminal history.

Limited research has explored the relationship prospects of the formerly incarcerated. One of the few studies to do so used survey data of attitudes from nearly 500 African American female heterosexual college students (Gibson et al., 2009). While most reported they would consider a relationship with a formerly incarcerated man, this depended on the severity of his offense. Two experimental audit studies of criminal stigma in app-based dating found differences across race in the mate selection of heterosexual men and women (Evans, 2019; Evans & Vega, 2020). While parole disclosure impeded matches for Black and Latinx men and women, White female and male dating profiles disclosing parole had significantly *more* matches than their identical non-parole counterparts. The current study uses a similar experimental audit design but with key modifications to improve profile validity,<sup>2</sup> disclose parole status briefly using more neutral phrasing, and include fewer dating apps to ensure all study profiles appear on all apps. Moreover, the dating app landscape experienced changes in the two-year period between the studies. In this short time, multiple dating apps became defunct and five apps in the current study were launched. The marketplace of online dating has favored a few well-established apps but continues to evolve to meet the needs of specific groups of online daters. The population of online daters changes constantly as new users join and former users leave or switch to different apps.

Research on romantic relationships and criminality has mostly focused on marriage and cohabitation. The potential for committed relationships to facilitate the reintegration and desistance process implores research on the precursors of marital unions in Western society, starting at the initial point of meeting prospective partners. Research has only begun to investigate pre-marriage intimate relationships among the formerly convicted (Evans, 2019; Evans & Vega, 2020), and the current study adds to this body of work.

### Online dating and the shift to app-based dating

App-based dating has transformed the mate prospecting landscape. Here, *app-based* refers to the use of software applications (“apps”) designed primarily for use on mobile devices (e.g., cellular phones) as opposed to applications designed for use on a personal computer (PC). We conceive of *dating* as a liberal term, encapsulating meeting another for an intimate experience arising from shared sexual or romantic attraction (e.g., in hopes of a long-term relationship, a one-time sexual fling, or something in-between).<sup>3</sup> Dating apps are designed especially for that purpose (e.g., Tinder, OKCupid, etc.).

Already large proportions of single individuals were reporting use of online platforms for dating, even before the advent of app-based dating (Rosenfeld & Thomas, 2012; Valkenburg & Peter, 2007). A recurring explanation is the dramatic reduction in costs – measured in effort and commitment – to engage in mate selection (Bapna et al., 2016; Hobbs et al., 2017). PC-based online dating makes large pools of potential daters available through the minimal effort of logging-in, allow users to explore numerous options at once, control the pace of conversation (e.g., as seen in “breadcrumbing”; Navarro et al., 2020) and easily terminate interactions by simply ignoring messages (i.e., “ghosting”; LeFebvre, 2017). While physical attraction has always been an essential component of dating desirability, online dating profiles notoriously emphasize physical appearance (Fiore et al., 2008; Hitsch et al., 2010). The regularity of carefully crafted idealized representations combined with a larger pool of potential mates has heightened competition for dates by expanding the number of attractive dating options available. This, in turn, decreases the amount of time and effort a user is willing to dedicate to gathering information on any one potential date, i.e. increases user impulsivity (Jung et al., 2019).

App-based dating provides these same benefits even better due to improvements in user-centered interface design tailored especially for mobile devices. Several apps have retained the traditional online format where users log in to a screen display of multiple pictures of potential dates, but many have adopted the “Tinder” model either exclusively or along with the traditional format (e.g., OKCupid). In this model, users have a single profile displayed (conspicuously displaying photographs of the prospect) and use touchscreens to finger swipe to the right (indicating interest) or to the left (indicating disinterest) (Sumter et al., 2017). This feature allows users to swipe through dozens of profiles in a matter of minutes. Jung et al. (2019) analyzed data from 100,000 users of a dating website who had moved from its PC-based format to accessing it through a mobile app. They found that adoption of app-based dating versus online dating increased logins to the site by 192% per week for females and by 175% per week for males. Additionally, users’ views of others’ profiles increased by 179% and 234% for women and men, respectively, compared to a control group. Message communications increased by just over 71% and 61% for females and males, and, perhaps most importantly, there was a 64% and 21% increase in “matches” for women and men.<sup>4</sup>

Online dating increases disinhibition (Bapna et al., 2016). Individuals are less inhibited online and will initiate and respond to interest from individuals they would not typically through more traditional means. Disinhibition makes it more likely that users will show interest in others of different backgrounds (e.g., those of another race) or where interest would otherwise be stigmatized (e.g., in the case of professed heterosexuals who show interest in members of the same sex). Subsequently, increasing use of online dating platforms leads to greater heterogony in dating couples. It appears disinhibition is magnified in

app-based dating. Jung et al. (2019) reported that users in their study who switched from online to app-based dating increased their views of user profiles of a different race by over 85% for females and 127% for males. Additionally, views of profiles of shorter individuals and those with only a high school education (both groups hypothesized as less desirable) increased by approximately 58% and 122%, respectively, for women and 122% and 184% for men.

The unique environment of app-based dating is expected to moderate the relationship between a criminal record and success in the dating market. More focus on physical appearance should de-emphasize the importance of criminal record, at least in the “interest stage” of mate selection. Impulsivity should make users less likely to investigate prospects’ backgrounds, either through formal background searches and, perhaps, even neglecting to fully read user profiles. This, in turn, may make it more likely that users will unknowingly engage with previously convicted users. Increased disinhibition might make app users more willing to explore the previously convicted as a dating option. Changing motivations for those operating in the dating market (e.g., hooking up) might make previous conviction less salient, while access to wider markets might allow members of groups with higher rates of conviction (e.g., Blacks and Latinx) to be more selective and avoidant of the previously convicted. The impact of criminal record in this sphere is, to our knowledge, heretofore unexplored. Therefore, the current study adds to the literature in relationship science (Reis et al., 2013) by providing insight into outcomes of individuals stigmatized by criminal record in app-based dating markets.<sup>5</sup>

## Methods

The current study extends the experimental audit design to dating apps. Audit studies are field experiments in which paired control and treatment “testers” (i.e. researchers) pose as resource seekers (e.g., persons seeking housing, employment, relationships, etc.) and apply for a service in order to measure reactions to their application that may be suggestive of discrimination. Testers exhibit a characteristic that is either factual (i.e. one’s own race or sex) or could be contrived (e.g., criminal history) to determine the extent to which the characteristic is stigmatized in that context (Pager, 2007). Prior audit studies of criminal record disclosure have found that it negatively affects employment prospects (Decker et al., 2015; Pager, 2003), housing outcomes (Evans & Porter, 2015; Evans, Blount-Hill, et al., 2019), and college admission (Evans, Szkola, et al., 2019; Stewart & Uggen, 2020). The audit design has only recently been used to explore how criminal stigma impacts dating relationships (e.g., Evans, 2019; Evans & Vega, 2020). This method was used because of its ability to measure observable acts in real-world settings, which is a distinct advantage over survey designs (Besbris et al., 2018). Audit designs have been increasingly used in criminal justice research since Pager (2003) adapted the method from studies of racial disparities in housing access.

This study builds on prior audits of criminal stigma in app-based dating (Evans, 2019; Evans & Vega, 2020) but with important methodological modifications. First, while the previous audits used a single online stock photo for each profile, this study included three pictures for each study profile to enhance face validity of profiles. Second, study profile bios in the experimental condition disclosed parole succinctly for the current study. The prior studies included parole disclosure as part of a longer redemptive script.<sup>6</sup> Third, fewer dating



apps (9) were used in the current study compared to the former (18), which enabled all 12 study profiles of all race-gender combinations to collect data across each dating app. Both studies were conducted in the greater New York City area. The research team conducted this study in two phases. Phase one involved dating app selection and setting parameters for connecting with users that would determine the final sample. Phase two necessitated creation of study profiles to use for data collection.

### **Research questions and hypotheses**

The research questions guiding this study are, how does parole disclosure affect match likelihood in app-based dating, and to what extent do sex and race interact with parole disclosure to affect match rates? The research team hypothesized that parole disclosure would reduce the likelihood of matching with other dating app users relative to the match rate of control profiles. Similar to prior research that found a compounded effect of race and criminal stigma (Pager, 2003), it was hypothesized that parole disclosure in online dating profiles would have even more negative effects for racial minorities.

### **Dating apps**

The apps selected for this study needed to have general appeal and not be targeted to specific religious, racial, or age subgroups. Requiring payment of financial user costs or fees warranted exclusion. Apps that required a link to one's social media profiles and apps that involved more than a quick "swipe" or "like" to connect with other users were also excluded.<sup>7</sup> Dating apps were also omitted if they included a statement in user agreements prohibiting potential users with a criminal history. The dating apps selected for this study did not require information about criminal history. The final sample included nine online dating apps.<sup>8</sup>

Because each app uses an unpublished algorithm to determine connections, selecting a truly random sample of app-based dating users is not possible and the research team had no control over selection of app-based dating users included in this study. Apps do allow for specification of parameters that expand or limit the algorithm's reach, and the research team used the following option settings to restrict the sample: Apps were set to heterosexual so that male profiles would only be exposed to female daters and female profiles would only be able to connect with male daters. Apps connect users through geo-location technology and allow users to set their own distance between others with whom they wish to connect. The research team selected the maximum distance, which was 100 miles for most apps,<sup>9</sup> to increase the size of the sampling frame for each app. The age range for the pool of potential matches was set at 18 to 60 to ensure users were of legal age and further expand the sampling frame.<sup>10</sup>

### **Profiles**

App-based dating profiles consist of two primary sources of information: *visual* pictures and *written* information about oneself, i.e. a bio. The research team recruited family members, friends, and colleagues to participate in providing study pictures. A racially diverse sample was sought to ensure study profiles would include Black, White, and Latino male and female photographs. To minimize bias, the research team recruited at

least five participants of each race/ethnicity–gender combination and subjected pictures to pre-rating. A total of 50 participants submitted pictures for this study.

The research team recruited another group of participants to rate the 50 photographs in terms of attractiveness (1–10), perceived race/ethnicity (open-ended), age (open-ended), and overall believability (1–10) as app-based dating profile pictures. A total of 47 participants provided ratings to inform selection of profile pictures (see Table 1 for rater demographics). The research team excluded pictures with believability ratings below 7.0 and those in which less than 70% of raters agreed on the race/ethnicity. All age ratings fell within the desired range for profile pictures (21–29 years old) so these ratings did not exclude any pictures.<sup>11</sup> Of the pictures that met eligibility criteria, those with the highest attractiveness ratings were selected for study profiles (see Table 2 for attractiveness and believability ratings for the six study profile pictures). Since this study explores app-based dating outcomes that are heavily determined by attractiveness, profiles were intended to be desirable to isolate the effect of parole disclosure. Pictures from six different individuals – a Black, White, and Latino male, and a Black, White, and Latina female – were selected and duplicated for the control and experimental conditions, with the only difference between the groups being the statement of parole disclosure.

The next phase of profile building was creating written bios. The research team searched actual male and female online dating profiles and articles about successful profile bios to gather enticing statements. Eight members of the research team submitted sample male and female bios and the lead author led the 14-person research team in a focus group to select the most appealing phrases. Five selected phrases were combined to create the male profile bio and five phrases were chosen for the female profile bio. Bios for the experimental (parole) and control (no parole) study profiles were identical except for the experimental manipulation – a brief statement of parole disclosure – included only in profiles in the experimental group. The following written bio was used for all female profiles, with the

**Table 1.** Demographics of photograph raters.

Variable	N	Percent
<b>Race</b>	47	
White	7	15%
Black	8	17%
Hispanic	19	40%
Mixed	7	15%
Other	6	13%
<b>Sex</b>		
Female	30	64%
Male	17	36%
<b>Age</b>		
Range	18–35	
Mean	21.8	

**Table 2.** Study profile picture ratings scored from 1 (least) to 10 (most).

	Attractiveness	Believability
Black Female	6.6	7.4
Latina Female	8.1	7.9
White Female	7.2	7.5
Black Male	7.0	7.5
Latino Male	5.9	7.9
White Male	6.1	7.6



parole disclosure statement (italicized) only included with profiles in the experimental condition:

Health and fitness enthusiast  
 Looking for someone open minded to explore the world with  
 Animal lover but I love my German Shepherd the most  
 Always up for an adventure  
*I'm on parole, but I don't let my past define my future*  
 Swipe and tell me your favorite show to binge watch!

Male written bios were different but with the same statement for parole disclosure in the experimental group:

6 0  
 Health and fitness enthusiast  
 Passion for travel  
 Always up for an adventure  
 Love spending time outside – especially hiking  
*I'm on parole, but I don't let my past define my future*  
 Looking for someone as easy going and open minded as I am .... And who appreciates my corniness!

Two study apps requested additional profile information, which was standardized across all apps and intended to be non-controversial and mainstream. This information included some or all of the following: Education: high school graduate; job: medical assistant, which only requires a high school degree; body type: average, location: Fort Lee, New Jersey, kids: no, religion: Christian, politics: independent, drinking: no, and smoking: no.

### **Data collection**

The 12 study profiles in the experimental (6) and control conditions (6) were randomly assigned to apps to start data collection. All profiles were rotated across each app until every race-gender combination appeared on each app. Study profiles were staggered across the nine dating apps so that no more than one male and one female profile were live on the same app at one time. This ensured that users in the sample of app-based daters would not be exposed to multiple study profiles with identical written bios. Research team members managed each profile for seven to 14 days. Their objective was to attempt to match with (“swipe right” on) 1,000 online daters during this one to two-week period and measure matches, which occur when two parties swipe right on one another. There were no exclusionary criteria so app managers (research assistants) swiped right on the first 1,000 profiles selected without replacement. After a swipe, whether affirmative or rejection, the app will not show that profile again so it is effectively eliminated from the possibility of repeated sampling. Most apps only allow communication between two parties after a match occurs. However, to minimize deception, the research team did not communicate with the sample of app-based daters who matched with study profiles.

All profiles of different sex-race combinations were launched on each of the nine study apps during the course of data collection so that each profile amassed 9,000 total swipes across the nine apps. One profile (Latina female not disclosing parole) was inadvertently duplicated several weeks apart, so swipes and matches for both profile were retained in the

final dataset. In total, study data included 54,000 swipes in the parole disclosure condition and 55,000 swipes in the control condition.

For all matches, the research team entered data on the gender, race, age, and location of matches, in addition to message content and number of messages if matched users sent them. Location information was not consistently available across all apps and some apps do not allow for direct messaging so these variables were not considered in analyses. Following completion of 1,000 swipes and after 24 hours with no new matches, the research team deleted and deactivated study profiles. Each race/sex/parole combination (e.g., Black male disclosing parole, Black male no parole, White female disclosing parole, White female no parole, etc.) was launched across all study apps. Data collection took place from October to December of 2018 and February to March of 2019.

## **Analyses**

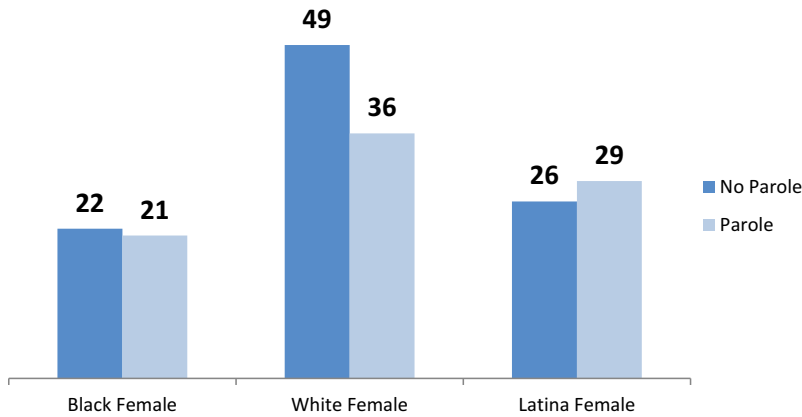
The unit of analysis was each researcher-initiated swipe.<sup>12</sup> The total number of swipes across all 12 profiles (6 experimental and 6 control) on each of the 9 study apps was 108,000 plus an additional 1,000 swipes from the duplicated profile noted above. The dependent measure (number of swipes that resulted in a match) is binary and thus non-parametric, which requires a Mann-Whitney U test to analyze differences between any two groups (McKnight & Najab, 2010). In this study, parole profiles were compared to control profiles and dummy coding race/ethnicity allowed for comparison of one race/ethnicity group to the other two. Linear regression tested for predictive value of parole disclosure, race, and gender in app-based dating outcomes because the primary measure was dichotomous (match or no match).

## **Results**

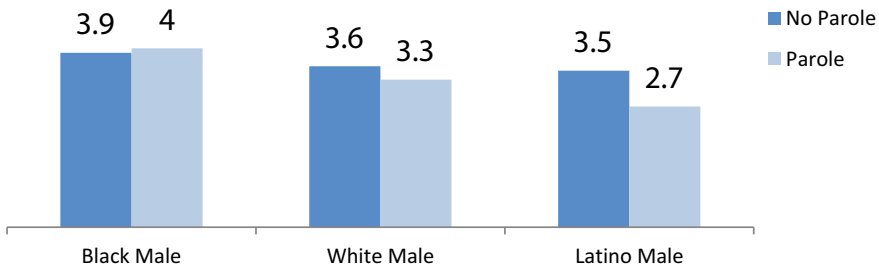
Bivariate analyses were used to test for main effects among the independent variables – race, sex, and parole disclosure – on the interest of app-based dating users toward study profiles. Bonferroni correcting was used to account for multiple testing (Reinhart, 2015). The dependent measure was a probability indicating the number of successful matches out of the total number of swipes per profile. Figures 1 and 2 illustrate the percentage of successful matches between profiles disclosing and not disclosing parole for Black, White, and Latinx female and male study profiles. Multivariate linear regression was used to create models testing the relationships between the independent variables and the percentage of successful matches across study profiles, isolating effects of each by controlling for the others. Linear regression was chosen to include interaction terms (Mustillo et al., 2018) and to limit error in comparing results across models and app samples (Mood, 2010).<sup>13</sup>

## **Rank sum tests**

The first analysis considered the effect of parole disclosure on the percentage of swipes that led to a successful match using a series of rank sum tests due to nonparametric data. Profiles in the experimental condition (parole disclosure) matched at a significantly lower percentage (16%) compared to profiles in the control condition (18.2%). The next set of analyses tested for the effect of parole disclosure across sex. The gap between successful match rates



**Figure 1.** Percentage of swipes that resulted in successful matches for female study profiles by race and parole disclosure.



**Figure 2.** Percentage of swipes that resulted in successful matches for male study profiles by race and parole disclosure.

for male and female profiles was large, with female study profiles matching nearly 10 times as frequently as male study profiles. Among male study profiles, disclosing parole significantly (but only before Bonferroni correction) reduced the percentage of successful matches (3.3%) compared to the control condition (3.7%). The difference between female profiles disclosing parole (28.7%) and not disclosing parole (32.3%) was also significant. Analyses also considered differences across each racial/ethnic group considered in this study (see Table 3).

There was no significant difference between Black study profiles that disclosed parole (12.6%) and those that did not disclose parole (12.9%). For Latinos, the difference between the percentage of swipes that resulted in a successful match was also not significantly different between parole disclosing (16%) and non-disclosing (15.5%) profiles. The difference among White study profiles was significant such that those disclosing parole (19.5%) matched at a lower percentage than those not disclosing parole (26.4%).

The next set of analyses tested for differences across parole disclosure for each profile by sex and race/ethnicity. For Black female profiles (21.2% in parole condition vs. 21.8% in control condition), Black male profiles (4.0% vs. 3.9%), and White male profiles (3.3% vs. 3.6%), there was no significant difference in match percentages between the experimental

**Table 3.** Rank sum tests comparing the percentage of swipes that resulted in match across experimental (parole disclosure) and control (no disclosure) study profiles by sex and race.

Match percentage				
<i>Factor</i>	Parole	No Parole	Z-score	<i>p</i> -value
<b>Main Effect</b>	16.0%	18.2%	9.57	<.0001***
<b>Sex</b>				
Female	28.7%	32.2%	8.96	<.0001***
Male	3.3%	3.7%	2.11	.035*
<b>Race</b>				
Black	12.6%	12.9%	.791	.429
Latinx	16.0%	15.5%	-1.42	.155
White	19.5%	26.4%	15.72	<.0001***
<b>Sex/Race</b>				
Black Female	21.2%	21.8%	1.05	.293
Latina Female	29.4%	26.3%	-4.72	<.0001***
White Female	35.6%	49.2%	18.51	<.0001***
Black Male	4.0%	3.9%	-.306	.760
Latino Male	2.7%	3.5%	3.06	.002***
White Male	3.3%	3.6%	1.10	.272

\* $p < 0.05$  before Bonferroni correction; \*\*\* $p < .05$  after Bonferroni correction (the  $p$  value cutoff for Bonferroni correction is  $p = .05/11$  outcomes =  $p < .0045$ )

and parole conditions. For White female profiles (35.6% vs. 49.2%) and Latino male profiles (2.7% vs. 3.5%), disclosing parole significantly reduced the percentage of successful matches compared to the corresponding control profiles that did not disclose parole. Latina female profiles that disclosed parole actually received a higher percentage of successful matches (29.4%) compared to non-parole disclosing Latina female profiles (26.3%). This difference was significant.

### Regression models

Two linear regression models were constructed in order to parse the effect of a user's disclosing parole on the likelihood of success in her or his attempt to match with another user. Models include the measure of *race* in order to further parse the effect of study profile race in comparison to, and in interaction with, parole disclosure. To ensure coefficients of *race* and *parole disclosure* were estimated net of any variance explained by the particular dating app or researcher collecting the data, *dating app* and *dating app manager* (member of the research team who managed a particular profile on one of the study apps) were included as control variables.<sup>14</sup> Finally, separate models were run for males and females given the near ubiquitous finding within relationship science that dating dynamics are incredibly gendered and that explanations for the dating preferences of one gender do not provide much insight into the motivations of the other (see Bapna et al., 2016).

Model 1 reveals that the likelihood of male users obtaining a successful match does not significantly change compared to White males who do not disclose parole whether the user is Black or Latino, or White or Black and discloses parole. The sole exception was the Latino profile, which saw a significant decrease in matches relative to the reference category. The overall model does explain outcome variance at statistical significance (suggesting that, taken together, race and parole disclosure are predictors of match success), but explains only a very small amount of variance with no single variable achieving significance on its

own ( $R^2 = .001$ ,  $p < .001$ ). That the model reached statistical significance is somewhat less telling given the number of observations (i.e. match attempts) included in the analysis ( $n = 54,000$ ) and the tendency for regression models to overestimate significance in such circumstances. In short, the model does not capture the forces dictating match success among males. Given the very low rate of match success for male profiles to begin with, it may be that male users rely more on luck and that female users may reciprocate interest much less than males.

Model 2 is statistically significant and explains more than nine percent of the variance in female study profile likelihood of obtaining a successful match ( $R^2 = .095$ ,  $p < .001$ ). Disclosing parole significantly reduced the likelihood that study profiles matched with male app-based daters. The significance of *dating app* in the model indicates the variation in match success is partially explained by the particularities of the individual apps. Compared to White female profiles that did not disclose parole, all other female study profiles with and without parole disclosures had lower likelihood of matching with male online daters (see Table 4).

The final linear regression models considered the influence of race on dating app user match preferences. A variable was created to test for racial congruence of matches. Across all matches, 61% were with a user of a different race. A cross tabulation indicated that non-Latinx dating app users matched with Latinx study profiles nearly 70% of the time, non-Black dating app users matched with Black study profiles 66% of the time, and nonwhite users matched with White study profiles 52% of the time. Isolating study profiles disclosing parole, different race matches decreased to 64% for the Latino study profiles, increased slightly to 67% for Black study profiles, and dropped to 44% for White study profiles. When examining profiles in the non-parole condition (9,685 total matches across all profiles), 57% of dating app users matched with a study profile of a different race than themselves. Of the slightly more than 8,400 matches with study profiles disclosing parole, only 43% of users matched with a study profile of a different race. To test how parole disclosure and racial congruence of matches interact, a linear regression model was constructed using a variable specifying racial congruence of match (same race = 0, different race match = 1) as the outcome and focusing only on the subset of swipes that resulted in a match. Model 3 is statistically significant and explains 4.1% of the variance in male study profile racial homo- or heterogeneity of matches ( $R^2 = .041$ ,  $p < .001$ ). Compared to White male profiles that did

**Table 4.** Linear regression models predicting match success by race and parole disclosure compared to white profiles not disclosing parole status.

Ref: White, no parole disclosed	Model 1: Male Profiles		Model 2: Female Profiles	
	Coef.	SE	Coef.	SE
White, disclosing parole	-0.003	0.003	-0.072***	0.007
Black, no parole disclosed	0.003	0.003	-0.201***	0.007
Latinx, no parole disclosed	-0.002	0.003	-0.167***	0.006
Black, disclosing parole	0.003	0.003	-0.215***	0.007
Latinx, disclosing parole	-0.010***	0.003	-0.154**	0.007
Control: Dating app	0.000	0.000	-0.024***	0.001
Control: Dating app manager	0.000	0.000	-0.020***	0.000
$R^2$	0.001***		0.095***	
$n$	54,000		55,000	

\*\*  $p < .01$ \*\*\*  $p < .001$

*Dating app* and *dating app manager* are included here only to control for the degree of variance explained by changes in these values; odds ratios are not practically meaningful.

**Table 5.** Linear regression models predicting racial congruence of matches (0 = same race match, 1 = interracial match) by race and parole disclosure compared to white profiles not disclosing parole status.

Ref: White, no parole disclosed	Model 3: Male Profiles		Model 4: Female Profiles	
	Coef.	SE	Coef.	SE
White, disclosing parole	−0.121**	0.041	−0.100***	0.012
Black, no parole disclosed	−0.050	0.040	0.094***	0.013
Latinx, no parole disclosed	0.120**	0.041	0.209***	0.012
Black, disclosing parole	−0.078	0.043	0.141***	0.013
Latinx, disclosing parole	0.157***	0.044	0.077***	0.012
Control: Dating app	0.001	0.004	0.015***	0.001
Control: Dating app manager	0.006	0.003	−0.009***	0.001
$R^2$	0.041***		0.056***	
$n$	54,000		55,000	

\*\*  $p < .01$ \*\*\*  $p < .001$

*Dating app* and *dating app manager* are included here only to control for the degree of variance explained by changes in these values; odds ratios are not practically meaningful.

not disclose parole, users who matched with White male profiles that did disclose parole were significantly less likely to be racially diverse and users who matched with Latino profiles were significantly more likely to be non-Latino, whether disclosing parole or not. Model 4 is statistically significant and explains 5.6% of the variance in female study profile racial homo- or heterogeneity of matches ( $R^2 = .056$ ,  $p < .001$ ). The model indicates that male users matching with White female study profiles disclosing parole were significantly more likely to be White. Male users who matched with Latina and Black female study profiles were significantly more likely to be of a different race than study profile matches regardless of parole disclosure (see Table 5).

## Discussion

By experimentally manipulating parole status in app-based dating to estimate its effect on the ability to meet prospective romantic partners, this article establishes one possible method for measuring behavioral reactions indicative of criminal stigma in dating contexts. Previous research on romantic relationships among the formerly incarcerated prioritized the impact of marriages, cohabitations, and non-committed relationships, with minimal consideration of where formerly incarcerated persons meet prospective dates, how these relationships begin, how long following release they seek out dating partners, or the point at which they disclose their criminal past to a romantic partner. While prior audit studies of criminal stigma in online dating found that White women and men disclosing parole matched at higher rates than non-parole disclosing control profiles, the exposure of those studies was markedly different (Evans, 2019; Evans & Vega, 2020). The current study found a negative effect of parole on dating app matches. Bivariate analyses showed that compared to control condition profiles, parole disclosure reduced matches for the White female profile, slightly increased matches for the Latina profile, and had no effect on the Black female profile. However, when controlling for profile race and sex as well as dating app in the regression model, relative to the White female profile not disclosing parole, there was a negative effect of parole disclosure on the match rates of the Black, Latina, and White female profiles. Are the present results comparable to the prior studies? Differences in

dating apps used appear to have had some impact on the great discrepancy in results between the current and prior studies. However, given key improvements in study materials and procedures from the prior studies, we believe that these study data have greater validity.

This article provides an estimation of the barriers to dating due to criminal stigma. Contrary to the findings of nearly every prior audit study examining racial and criminal stigma, this study found that White women experienced the largest decline in dating app matches of the three racial groups when disclosing parole. It is important to note that the White female profile disclosing parole still matched at a higher rate than the Latina and Black female profiles in both the parole and non-parole conditions. This is perhaps indicative of racial hierarchies of desirability in mate selection (Tsunokai et al., 2009) and racialized conceptions of femininity, especially amongst primarily White male swipers<sup>15</sup> (Feliciano et al., 2009). Nevertheless, our findings suggest White women decline from very high desirability to something closer to their counterparts of color once they disclose parole. The negative effect of parole for White women could suggest that this group receives harsher judgment from the greater New York City area dating app community compared to Latinas and Black women. We are careful not to generalize outside of this experimental context, because in-person dating would rarely open with criminal history disclosures, but this research shows that formerly incarcerated people, or at least those whose physical appearance reaches a certain threshold of attractiveness, are still able to attract interested dating partners. Compared to previous audit studies exploring race and criminal stigma, this article reveals that the interaction between criminal stigma and race operates differently in dating encounters than in employment, housing, and other contexts. Unlike applying for a job, apartment rental, college admission, or a bank loan, there are no formal background checks in dating, although registered sex offenders may have more difficulty meeting romantic partners because their personal information and offense histories are searchable online (Tewksbury & Lees, 2006). Another crucial difference is that physical attractiveness alone can increase one's dating success while access to the other aforementioned social resources is more contingent on financial stability or prior record of some accomplishment. Women and men in speed dating – the live, in-person equivalent of app-based dating – spurn prospective partners low in attractiveness and prefer attractive partners regardless of other characteristics when considering short-term relationships (Li et al., 2013). Attractiveness appears to attenuate some of the negative effects of criminal stigma on dating prospects.

Results of the current study reinforce that men have a far more challenging experience connecting with women through app-based dating regardless of their race, appearance, or disclosed parole status. Latino male study profiles matched with fewer users when disclosing parole, and Black and White male study profiles were not significantly affected by parole disclosure, but the relatively lower percentage of matches for males makes it difficult to draw meaningful conclusions from these results. Despite the low percentage of matches across male study profiles, that more than 900 female dating app users matched with a man disclosing parole shows that some women either value honesty, are unbothered by communicating with or even dating a man under criminal justice supervision, or perhaps they like “bad boys” for casual sex or romance (Herold & Milhausen, 1999). Of course, there is also the possibility of abundant impulsive selection, whereby female users matched with male profiles without giving much attention to the profile biography, though research has shown female users to be more deliberative than male users (Jung et al., 2019). Women have



a much easier time connecting with male dates through app-based dating. They can, and according to these study results do, choose to be more selective of their prospective dates given their higher match to non-match ratio. White females in particular matched far more frequently than Latinas and Black females regardless of parole disclosure. This could be in part due to racial demographics of dating app users included in this study, which were majority White.<sup>16</sup> Female success in app-based dating could indicate that males indiscriminately attempt to match with female dating app users, but the effect of parole on match percentages across the Black, White, and Latina female study profiles suggests that enough men are reading user bios. The relative difficulty males face in matching with female dating app users means that to be even remotely successful, they must be willing to overcome consistent rejection and non-responsiveness even after matching.

Considering the racial congruence of matches indicated the interactive effect that race and parole have on the preferences of dating app users. Those who matched with White male and female study profiles disclosing parole were more likely to also be White. In comparison, matches with all Black and Latinx study profiles were more likely to be interracial. Because study profiles did not list an offense, it is possible that dating app users make assumptions about the offense(s) that study profiles could have committed. White dating app users may be more comfortable dating another White person with a criminal record because they feel comfortable with the possible offenses that could have led to incarceration and parole. Black, Latinx, and other minority race users may be uncertain of the possible offenses that could lead a White man or woman to end up on parole. This perceived risk, emanating in part from criminal stereotypes and the degree of one's punitive attitudes, could have deterred many from matching. These stereotypes and attitudes are informed in part by media portrayals and societal representations of criminal groups (Woods, 2011), individuals' explicit and implicit attitudes toward racial groups and those with a criminal record (Zestcott et al., 2018), and beliefs about redeemability (Maruna & King, 2009). The greater likelihood of interracial matches with Black and Latinx study profiles regardless of their parole disclosure was unexpected. Users may not perceive as much risk in dating a Black or Latinx person, or they may be actively attempting to resist stereotypes of Black and Latinx people with a criminal record. In New York City, the heart of the study range, as recently as 2011, Black and Latinx residents were subject to stop-and-frisk at a rate of more than 10 to one compared to White residents and many were arrested for minor drug crimes (Evans et al., 2014). The greater New York City area is very racially diverse and likely reflects different racial matching patterns than might be found elsewhere.

Although disclosing parole in one's dating app bio is uncommon, it provides an experimental means of analyzing how criminal stigma influences the choices of other dating app users. Similar to audit research exploring the discrimination that formerly incarcerated persons experience in employment and housing, app-based dating audits provide another important realm to measure criminal stigma. How willing someone is to forgive or overlook a criminal past or reject someone based on it reflects general sentiments toward dating the formerly incarcerated. Like employment and housing, relationships are valued social commodities that have important benefits for all citizens but are particularly advantageous in the reintegration process.

Abundant research has addressed the association between marriage and desistance, but less is known about the initiation of dating relationships among the formerly incarcerated. App-based dating was selected as the study site for exploring the effects of criminal stigma

because it 1) is an increasingly prominent platform for initiating dates; 2) is projected to grow in its use and to largely replace traditional forms of date searching; 3) is noninvasive; 4) minimizes ethical violations associated with experimental manipulations of in-person parole disclosure; and 5) allows for quick feedback from upwards of hundreds of thousands of users, depending on the number of dating apps users within a given radius. App-based dating is an increasingly popular way to meet potential partners, but it is by no means the only method of dating. Partners can meet through friends or family members, at work, through organized meet ups, in public places, or at communal gatherings.

The findings of this study suggest another arena in which the stigma of justice system involvement denies restoration to full societal participation for parolees and possibly others criminally stigmatized. Prior studies have shown the systemic harms of criminal labeling, reducing the ability of ex-offenders to obtain employment, find housing, or receive an education. Yet these systemic problems allow for systemic solutions, including changes in laws or policies and the imposition of regulatory, civil, or criminal liability. This study presents a problem of a different kind, instead revealing the cultural and interpersonal costs of criminal stigma. Such problems do not allow for correction through punitive action. Instead, solutions must involve measures for culture change. Jurisdictions must seek ways to destigmatize those who pay their “debt” to society and to encourage their fellow citizens to see them as fully restored to prospective innocence. Advocacy groups must find ways of humanizing parolees and other ex-convicted, through education and exposure. Individuals must check and consider their own biases and determine to reevaluate their own treatment of men and women with criminal records. Life is about more than surviving, more than finding food and shelter – it is about companionship. Thus, creating environments that welcome back the previously incarcerated as fully restored members of society are critical to encouraging their efforts toward societal reintegration.

These results and user agreements specific to each dating app could inform policy implications. Dating apps included in this study did not have criminal record restrictions in their user agreements, but other apps (e.g., Christian Mingle) prohibit users with such history, and a new app (Gatsby) even claims to run criminal background checks using publicly available databases. Background checks and blanket restrictions on dating app access for people with a criminal record or under community supervision represents another barrier to reentry. Such restrictions could create false positives (person is flagged as a felon due to similarity in name) or false negatives (person with a record in not flagged), so their effectiveness is questionable (*name deleted*). Although the criminal label may exacerbate the difficulty of forming new relationships, that users still matched with experimental profiles indicates a parole status does not completely obstruct dating app matches. Anti-criminal labeling policies would allow app users to have control over disclosure of this information. Allowing dating apps to exclude users based on criminal history paves the way for bans based on other stigmatized characteristics, such as mental illness or immigration status. Dating app developers, dating app users, and society as a whole need to re-address the proper contexts and purpose for requiring disclosure of one’s criminal label.

The technological revolution is changing the initiation of romantic relationships and perceptions of justice-involved persons. App-based dating has enhanced the ability to meet prospective partners and to instigate dating relationships while social media has increased discussions of racial injustice. As app-based dating grows and justice reform continues to be a topic of political and social discussion, criminal stigma will evolve over time. Future

research should continue to explore criminal stigma as an impediment to dating, focusing on different geographical regions and different subgroups. Southern and Midwestern app-based dating users may have different reactions to someone who discloses criminal history. Also, criminal stigma may operate differently among homosexual app-based daters.

### **Limitations**

This study represents a new domain for audit research and is thus subject to imperfections. Disclosing parole in one's dating profile is not standard practice and may be perceived as unusual or awkward to app-based dating users. Furthermore, there is no way to know how many dating app users in the sample were aware that a parole status indicates a someone was previously incarcerated. It is possible that negative reactions ("rejecting" study profiles) could be due to the disturbance of reading this unnecessary element of study bios rather than the stigma of being on parole. Differences between apps in terms of information required to setup profiles could have affected the results. For instance, selecting a high school education or Christian religion could have affected the sample, which would have implications for generalizability. An unanswered question that remains is the percentage of dating app users that read other users' written bios. The current study design hinges on this, but there is no way to accurately measure how many users actually read the study bios.

Some users of dating apps have their profiles on multiple apps to increase their chances of meeting dating partners. Users of multiple apps included in this study may have seen a study profile on more than one app, possibly one disclosing parole and another not mentioning parole, which could have influenced their likelihood of matching with the profiles. However, given that several apps used in this study boast user numbers in the multi-millions and because this study was conducted in the densely populated tristate area, the sampling frame appears to have been large enough to minimize this threat to validity. No users mentioned seeing a similar profile on different apps in messages to study profiles. An additional limitation of the current study was the inability to communicate with dating app users with whom study profiles matched. Communication could have provided more insight into reasons that someone would willingly match with a parolee, but IRB restrictions prevented this to avoid further misleading unknowing participants in this study.

Study findings are constrained by the apps selected for data collection. Some apps produced a plethora of matches for study profiles (the highest match percentage for one app was 31%) while other apps resulted in many fewer matches (the lowest match percentage for an app included in this study was 2.3%). There was also racial bias apparent in some apps, even when the apps appear race-neutral. White profiles matched in 78% of attempts on one particular app. On that same app, Black profiles matched in six percent of swipes. This suggests that dating app users target certain apps because of the racial makeup of users, but users also target apps based on what they seek from a partner, whether that be a long-term relationship or a short fling. This study included a range of dating apps to account for this diversity, but accessing a truly random sample of app-based daters is not possible without including every possible dating app.

A final limitation is that dating app algorithms controlled sampling for this study. Dating apps use similar algorithms based on a point system that scores users on their number of affirmative swipes received as well as the number of positive swipes that their "swiper" has received. Other factors, such as paid subscribers and a user's volume of activity on the app,

are likely considered, but dating apps do not publish the intricacies of their algorithms (Tiffany, 2019). Although the research team had no control over sampling for this study, accessing a truly random sample is an impossible feat in studies of app-based dating users.

## Conclusions

App-based dating provides a new frontier in relationship studies given its growing use as a forum for date searchers. For this reason, it must also be a site of study for those seeking to understand how the dating process is impacted by a criminal record. Prior research has suggested that the mobile app environment fundamentally changes the nature of the dating search, in some cases building on changes already seen in the societal move from traditional to online and app-based dating, and in other cases introducing new and uncharted transformations of the dating world. It has already been pointed out that further study to understand the impact of criminal history on dating prospects is necessary to understand how one comes to enjoy the desistance benefits of marriage. Trends show that future studies building this body of work will have to account for cyber-dating, specifically through mobile apps.

The current study provides a foundation for this work. Those studies done on app-based dating outside the criminal justice context have produced divergent findings often attributed to the heterogeneity of dating apps available. This challenge was highlighted in this study, where bivariate analyses by app showed significant differences in the results, and mobile app proved consistently significant in multivariate models. Assuming the unlikelihood of standardization across dating apps, researchers will need to conduct numerous studies, across apps, to piecemeal a fuller view of app-based dating patterns. Still, that choice of app is so important to a study's results complicates theorization of the moderating effects of the app environment, perhaps requiring separate explanations depending on the nature of the app itself. It is nonetheless important to keep in mind that those with prior criminal convictions sojourn into this increasingly accessible and yet complicated world of dating along with researchers; as such, further work in this area is of significant import if those individuals are to establish the loving relationships that will keep them from recidivating.

## Notes

1. "Googling" someone's name, if unique enough, could uncover online articles of crimes that received media attention, or it could expose anyone on a state sex offender registry. For common names, internet searches would only yield criminal information in highly publicized cases.
2. Evans (2019) found that a single picture for profiles resulted in some post-match messaged accusations of the profile being fake or a "catfish." In the current study there were negligible accusations of profiles being fake.
3. Prior research has defined "dating" as "a prolonged period of polygamous learning that eventually leads to a long term relationship such as marriage" (Jung et al., 2019, p. 54), as distinguished from more casual experiences, such as "hooking up." However, such distinctions are fraught. Characterizing the date experience itself is complicated; people bring varying interests and motives even to the same date, possibly competing within the same individual, and often not completely in line with the other person. This is much more so for the collection of activities colloquially grouped into "dating" in general (Seffrin et al., 2009). This complexity is perhaps exacerbated when such meetings are facilitated through dating apps, which host users with far flung motivations, and those changing from moment to moment or depending

on the individual on the other side of the interaction. Our definition is designed to encapsulate this bevy of potentialities in a broadly applicable category that roughly describes what takes place on these apps.

4. The researchers defined a *match* as a series of at least four message communications exchanged between two users (Jung et al., 2019).
5. It is worth noting that there are no blanket restrictions against cell phone ownership and dating app use for parolees, although convicted sex offenders on parole are generally prohibited from cell phone and internet use (Evans, 2012).
6. In those studies, the researchers used the following disclosure after several lines of positive description: “Not to get too deep, but in the past I made some poor choices (we all a work in progress), but I’m passionate about doing good in the world now. I speak to and counsel troubled youth because, up front, I’m coming off of parole (trying to live like the Joneses). Life is all about forward motion though, using your past to propel a brighter future” (Evans, 2019; Evans & Vega, 2020). The biography followed with several subsequent, welcoming statements inviting a match.
7. While swipe-based apps reveal one user at a time and require a decision (reject or attempt to match) be made before additional users are revealed, other apps require comments on other users’ pictures or answers to question prompts before a match can be made.
8. The IRB that approved this study asked the research team to contact app developers to inform them about the study and seek their approval to conduct it. Because no app developers responded, the IRB indicated that the research team could not disclose app names.
9. One app included in the study connected users worldwide. This app had the lowest overall match rate across all profiles (2.3%), by far, compared to the average across all apps (17.1%).
10. The average age of users who matched with study profiles was 27.4 years old.
11. Previous research has shown that younger adults, particularly in their twenties, utilize dating apps at somewhat higher rates than do older adults. A Pew Research Center survey revealed that nearly half of those aged 18–29 had used dating apps, the highest proportion of all age groups (Vogels, 2020). Both women and men tend to desire partners within three years of their own age, though in opposite directions (i.e. women seek slightly older men, with the reverse trend in men; DiDonato, 2019). The range of ages assigned to our study profiles fell within a range most active on dating apps and within three years of likely app users.
12. Swiping right indicates that one user “likes” another user but does not necessarily lead to an in-person date or even communication between matched users.
13. Common training would lead some readers to assume error here, i.e. that the dichotomous nature of the outcome required the use of logistic regression models. We sought to test the statistical significance of an interaction in a model with a categorical dependent variable – the precise situation in which the American Sociological Association, in its flagship publication, has advised against the use of nonlinear (e.g., logistic) models (Mustillo et al., 2018). The association cites work (e.g., Mood, 2010) that advise caution in using logistic models, especially when seeking to make comparisons across samples.
14. In the current study, we standardized most common demographic characteristics that would ordinarily be used as control variables, manipulating only race and parole disclosure. This standardization was designed to serve as an experimental control, as opposed to the statistical controls used more typically in survey strategies. We considered whether differences in believability or attractiveness may have influenced match rate, despite our attempt to minimize such differences through our profile selection process. Models including these variables did not substantially increase the explained variance of our outcome variable. That, and because the two ratings reflected the perceptions of our classroom raters and not of individual app users, we declined to include believability or attractiveness in our final model.
15. Of males who matched with female study profiles, 40% were White, 25% Latino, and 22% Black. The race/ethnicity of the remaining 13% of matches was not able to be confidently categorized because of differences in perceptions of at least two members of the research team.
16. Of males who matched with female study profiles, 40% were White, 25% Latino, and 22% Black.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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## References

- Bapna, R., Ramaprasad, J., Schmuely, G., & Umyarov, A. (2016). One-way mirrors in online dating: A randomized field experiment. *Management Science*, 62(11), 3100–3122. <https://doi.org/10.1287/mnsc.2015.2301>
- Beijers, J., van Prooijen, J. W., & Bijleveld, C. (2016). To marry a thief? Crime type as a deterrent to cohabitation. *Journal of Experimental Criminology*, 12(1), 159–165. <https://doi.org/10.1007/s11292-016-9253-3>
- Bersani, B. E., Laub, J. H., & Nieuwbeerta, P. (2009). Marriage and desistance from crime in the netherlands: Do gender and socio-historical context matter? *Journal of Quantitative Criminology*, 25(1), 3–24. <https://doi.org/10.1007/s10940-008-9056-4>
- Besbris, M., Faber, J. W., Rich, P., & Sharkey, P. (2018). The geography of stigma: Experimental methods to identify the penalty of place. In S. Gaddis (Ed.), *Audit studies: Behind the scenes with theory, method, and nuance* (pp. 159–177). Springer.
- Colvin, M., Cullen, F. T., & Vander Ven, T. (2002). Coercion, social support, and crime: An emerging theoretical consensus. *Criminology*, 40(1), 19–42. <https://doi.org/10.1111/j.1745-9125.2002.tb00948.x>
- Comfort, M., Grinstead, O., McCartney, K., Bourgois, P., & Knight, K. (2005). “You can’t do nothing in this damn place”: Sex and intimacy among couples with an incarcerated male partner. *The Journal of Sex Research*, 42(1), 3–12. <https://doi.org/10.1080/00224490509552251>
- Custer, B. D. (2016). College admission policies for ex-offender students: A literature review. *Journal of Correctional Education*, 67(2), 35–43.
- Decker, S. H., Ortiz, N., Spohn, C., & Hedberg, E. (2015). Criminal stigma, race, and ethnicity: The consequences of imprisonment for employment. *Journal of Criminal Justice*, 43(2), 108–121. <https://doi.org/10.1016/j.jcrimjus.2015.02.002>
- DiDonato, T. E. (2019, April 10). *What we know about age gaps in dating, love, and marriage*. Psychology Today. <https://www.psychologytoday.com/us/blog/meet-catch-and-keep/201904/what-we-know-about-age-gaps-in-dating-love-and-marriage>
- Doherty, E. E., & Ensminger, M. E. (2013). Marriage and offending among a cohort of disadvantaged African Americans. *Journal of Research in Crime and Delinquency*, 50(1), 104–131. <https://doi.org/10.1177/0022427811423106>
- Evans, D. N. (2012). *Registration nation: The impact of sex offender laws* [Doctoral dissertation]. Indiana University.
- Evans, D. N. (2016). The Effect of criminal convictions on real estate agent decisions in New York City. *Journal of Crime and Justice*, 39(3), 363–379. <https://doi.org/10.1080/0735648X.2016.1166068>
- Evans, D. N. (2019). Full disclosure: Experimental analysis of female online dating on parole. *Journal of Experimental Criminology*, 15(2), 170–199. <https://doi.org/10.1007/s11292-019-09357-2>
- Evans, D. N., Blount-Hill, K. L., & Cubellis, M. A. (2019). Examining housing discrimination across race, gender and felony history. *Housing Studies*, 34(5), 761–778. <https://doi.org/10.1080/02673037.2018.1478069>
- Evans, D. N., Maragh, C. L., & Porter, J. R. (2014). What do we know about NYC’s Stop and Frisk program?: A spatial and statistical analysis. *Advances in Social Sciences Research Journal*, 1(2), 130–144. <https://doi.org/10.14738/assrj.12.66>



- Evans, D. N., & Porter, J. R. (2015). Criminal history and landlord rental decisions: A New York quasi-experimental study. *Journal of Experimental Criminology*, 11(1), 21–42. <https://doi.org/10.1007/s11292-014-9217-4>
- Evans, D. N., Szkola, J., & St. John, V. (2019). Going back to college?: Criminal stigma in higher education admissions in Northeastern U.S. *Critical Criminology*, 27(2), 291–304. <https://doi.org/10.1007/s10612-019-09443-x>
- Evans, D. N., & Vega, A. (2020). Experimental analysis of male online dating on parole. *Journal of Crime and Justice*, 1–16. <https://doi.org/10.1080/0735648X.2020.1781678>
- Feliciano, C., Robnett, B., & Komaie, G. (2009). Gendered racial exclusion among white internet daters. *Social Science Research*, 38(1), 39–54. <https://doi.org/10.1016/j.ssresearch.2008.09.004>
- Fiore, A. T., Taylor, L. S., Mendelsohn, G. A., & Hearst, M. (2008). Assessing attractiveness in online dating profiles. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*: 797–806.
- Furst, R. T., & Evans, D. N. (2017). Renting apartments to felons: Variations in real estate agent decisions due to stigma. *Deviant Behavior*, 38(6), 698–708. <https://doi.org/10.1080/01639625.2016.1197635>
- Gibson, C., Roberson, D., & Daniel, A. (2009). African American women on the possibilities of a relationship with an ex-offender. *Journal of Criminal Justice*, 37(4), 328–332. <https://doi.org/10.1016/j.jcrimjus.2009.06.009>
- Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. Simon and Schuster.
- Herold, E. S., & Milhausen, R. R. (1999). Dating preferences of university women: An analysis of the nice guy stereotype. *Journal of Sex & Marital Therapy*, 25(4), 333–343. <https://doi.org/10.1080/00926239908404010>
- Hitsch, G. J., Hortaçsu, A., & Ariely, D. (2010). What makes you click? Mate preferences in online dating. *Quantitative Marketing and Economics*, 8(4), 393–427. <https://doi.org/10.1007/s11129-010-9088-6>
- Hobbs, M., Owen, S., & Gerber, L. (2017). Liquid love? Dating apps, sex, relationships and the digital transformation of intimacy. *Journal of Sociology*, 53(2), 271–284. <https://doi.org/10.1177/1440783316662718>
- Huebner, B. M. (2007). Racial and ethnic differences in the likelihood of marriage: The effect of incarceration. *Justice Quarterly*, 24(1), 156–183. <https://doi.org/10.1080/07418820701201073>
- Jung, J., Bapna, R., Ramaprasad, J., & Umyarov, A. (2019). Love unshackled: Identifying the effect of mobile app adoption in online dating. *MIS Quarterly*, 43(1), 47–72. <https://doi.org/10.25300/MISQ/2019/14289>
- Lageson, S. E. (2016). Found out and opting out: The consequences of online criminal records for families. *The ANNALS of the American Academy of Political and Social Science*, 665(1), 127–141. <https://doi.org/10.1177/0002716215625053>
- Lageson, S. E., Denver, M., & Pickett, J. T. (2019). Privatizing criminal stigma: Experience, intergroup contact, and public views about publicizing arrest records. *Punishment & Society*, 21(3), 315–341. <https://doi.org/10.1177/1462474518772040>
- Laub, J. H., Nagin, D. S., & Sampson, R. J. (1998). Trajectories of change in criminal offending: Good marriages and the desistance process. *American Sociological Review*, 63(2), 225–238. <https://doi.org/10.2307/2657324>
- LeFebvre, L. E. (2017). Ghosting as a relationship dissolution strategy in the technological age. In N. M. Punyanunt-Carter & J. S. Wrench (Eds.), *The impact of social media in modern romantic relationships* (pp. 219–235). Lexington.
- Leverentz, A. M. (2006). The love of a good man? Romantic relationships as a source of support or hindrance for female ex-offenders. *Journal of Research in Crime and Delinquency*, 43(4), 459–488. <https://doi.org/10.1177/0022427806293323>
- Lewis, K. (2016). Preferences in the early stages of mate choice. *Social Forces*, 95(1), 283–320. <https://doi.org/10.1093/sf/sow036>
- Li, N. P., Yong, J. C., Tov, W., Sng, O., Fletcher, G. J., Valentine, K. A., Jiang, Y. F., & Balliet, D. (2013). Mate preferences do predict attraction and choices in the early stages of mate selection. *Journal of Personality and Social Psychology*, 105(5), 757–776. <https://doi.org/10.1037/a0033777>



- Maruna, S., & King, A. (2009). Once a criminal, always a criminal?: 'Redeemability' and the psychology of punitive public attitudes. *European Journal on Criminal Policy and Research*, 15 (1–2), 7–24. <https://doi.org/10.1007/s10610-008-9088-1>
- Massoglia, M., Remster, B., & King, R. D. (2011). Stigma or separation? Understanding the incarceration-divorce relationship. *Social Forces*, 90(1), 133–155. <https://doi.org/10.1093/sf/90.1.133>
- McGloin, J. M., Sullivan, C. J., Piquero, A. R., Blokland, A., & Nieuwbeerta, P. (2011). Marriage and offending specialization: Expanding the impact of turning points and the process of desistance. *European Journal of Criminology*, 8(5), 361–376. <https://doi.org/10.1177/1477370811414103>
- McKnight, P. E., & Najab, J. (2010). Mann-Whitney U test. The Corsini Encyclopedia of Psychology: 1. Retrieved March 19, 2019, from <https://onlinelibrary.wiley.com/doi/abs/10.1002/9780470479216.corpsy0524>
- Montoya, R. M., & Horton, R. S. (2014). A two-dimensional model for the study of interpersonal attraction. *Personality and Social Psychology Review*, 18(1), 59–86. <https://doi.org/10.1177/1088868313501887>
- Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do, and what we can do about it. *European Sociological Review*, 26(1), 67–82. <https://doi.org/10.1093/esr/jcp006>
- Mustillo, S. A., Lizardo, O. A., & McVeigh, R. M. (2018). Editors' comment: A few guidelines for quantitative submissions. *American Sociological Review*, 83(6), 1281–1283. <https://doi.org/10.1177/0003122418806282>
- Navarro, R., Larrañaga, E., Yubero, S., & Villora, B. (2020). Psychological correlates of ghosting and breadcrumbing experiences: A preliminary study among adults. *International Journal of Environmental Research and Public Health*, 17(3), 1116. <https://doi.org/10.3390/ijerph17031116>
- Pager, D. (2003). The mark of a criminal record. *American Journal of Sociology*, 108(5), 937–975. <https://doi.org/10.1086/374403>
- Pager, D. (2007). The use of field experiments for studies of employment discrimination: Contributions, critiques, and directions for the future. *The Annals of the American Academy of Political and Social Science*, 609(1), 104–133. <https://doi.org/10.1177/0002716206294796>
- Pescosolido, B. A., & Martin, J. K. (2015). The stigma complex. *Annual Review of Sociology*, 41(1), 87–116. <https://doi.org/10.1146/annurev-soc-071312-145702>
- Reinhart, A. (2015). *Statistics done wrong: The woefully complete guide*. No Starch Press.
- Reis, H. T., Aron, A., Clark, M. S., & Finkel, E. J. (2013). Ellen Berscheid, Elaine Hatfield, and the emergence of relationship science. *Perspectives on Psychological Science*, 8(5), 558–572. <https://doi.org/10.1177/1745691613497966>
- Rosenfeld, M. J. (2017). Marriage, choice, and couplehood in the age of the internet. *Sociological Science*, 4(20), 490–510. <https://doi.org/10.15195/v4.a20>
- Rosenfeld, M. J., & Thomas, R. J. (2012). Searching for a mate: The rise of the internet as a social intermediary. *American Sociological Review*, 77(4), 523–547. <https://doi.org/10.1177/0003122412448050>
- Sampson, R. J., & Laub, J. H. (1995). *Crime in the making: Pathways and turning points through life*. Harvard University Press.
- Sampson, R. J., Laub, J. H., & Wimer, C. (2006). Does marriage reduce crime? A counterfactual approach to within-individual causal effects. *Criminology*, 44(3), 465–508. <https://doi.org/10.1111/j.1745-9125.2006.00055.x>
- Seffrin, P. M., Giordano, P. C., Manning, W. D., & Longmore, M. A. (2009). The influence of dating relationships on friendship networks, identity development, and delinquency. *Justice Quarterly*, 26 (2), 238–267. <https://doi.org/10.1080/07418820802245052>
- Stewart, R., & Uggen, C. (2020). Criminal records and college admissions: A modified experimental audit. *Criminology*, 58(1), 156–188. <https://doi.org/10.1111/1745-9125.12229>
- Sumter, S. R., Vandenbosch, L., & Ligtenberg, L. (2017). Love me Tinder: Untangling emerging adults' motivations for using the dating application Tinder. *Telematics and Informatics*, 34(1), 67–78. <https://doi.org/10.1016/j.tele.2016.04.009>
- Tewksbury, R., & Lees, M. (2006). Perceptions of sex offender registration: Collateral consequences and community experiences. *Sociological Spectrum*, 26(3), 309–334. <https://doi.org/10.1080/02732170500524246>

- Tiffany, K. (2019, March 18). *The Tinder algorithm, explained*. Vox. Retrieved April 1, 2019, from <https://www.vox.com/2019/2/7/18210998/tinder-algorithm-swiping-tips-dating-app-science>
- Tsunokai, G. T., Kposowa, A. J., & Adams, M. A. (2009). Racial preferences in internet dating: A comparison of four birth cohorts. *Western Journal of Black Studies*, 33(1), 1–15. Retrieved July 31, 2020, from <http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=44863390&S=R&D=a9h&EbscoContent=dGJyMMTo50Seqa84yOvqOLCmsEiep7FSr6a4Ta%2BWxWXS&ContentCustomer=dGJyMPGoskzprFJuePfgeyx44Dt6flA>
- Uggen, C., Manza, J., & Thompson, M. (2006). Citizenship, democracy, and the civic reintegration of criminal offenders. *The Annals of the American Academy of Political and Social Science*, 605(1), 281–310. <https://doi.org/10.1177/0002716206286898>
- Uggen, C., Vuolo, M., Lageson, S., Ruhland, E., & Whitham, H. K. (2014). The edge of stigma: An experimental audit of the effects of low-level criminal records on employment. *Criminology*, 52(4), 627–654. <https://doi.org/10.1111/1745-9125.12051>
- Valkenburg, P. M., & Peter, J. (2007). Who visits online dating sites? Exploring some characteristics of online daters. *CyberPsychology & Behavior*, 10(6), 849–852. <https://doi.org/10.1089/cpb.2007.9941>
- Vogels, E. A. (2020, March 24). *About half of never-married Americans have used an online dating site or app*. Pew Research Center. <https://www.pewresearch.org/fact-tank/2020/03/24/the-never-been-married-are-biggest-users-of-online-dating/>
- Woods, J. (2011). Framing terror: An experimental framing effects study of the perceived threat of terrorism. *Critical Studies on Terrorism*, 4(2), 199–217. <https://doi.org/10.1080/17539153.2011.586205>
- Wyse, J. J., Harding, D. J., & Morenoff, J. D. (2014). Romantic relationships and criminal desistance: Pathways and processes. *Sociological Forum*, 29(2), 365–385. <https://doi.org/10.1111/socf.12088>
- Zestcott, C. A., Tompkins, T. L., Kozak Williams, M., Livesay, K., & Chan, K. L. (2018). What do you think about ink? An examination of implicit and explicit attitudes toward tattooed individuals. *The Journal of Social Psychology*, 158(1), 7–22. <https://doi.org/10.1080/00224545.2017.1297286>
- Zoutewelle-Terovan, M., van der Geest, V., Liefbroer, A. C., & Bijleveld, C. (2016). The influence of criminal offending on union formation and union dissolution for disadvantaged individuals. *Advances in Life Course Research*, 28, 31–40. <https://doi.org/10.1016/j.alcr.2015.08.001>