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Straight White Men's Geosocial App Preferences: Exploring the Effects of Race

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ABSTRACT

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Geosocial apps on mobile phones use location data to introduce many young adults to other people to initiate various types of relationships. This study examined how established racial preferences affect Straight White Men's (SWM) selection decisions of potential partners in a pseudo-geosocial app when controlling for age, attractiveness, and other profile factors of potential matches. A sample comprising exclusively of SWM was selected because historically, this demographic has benefited most from gender and racial inequalities (Thompson, 2009), and they make up the largest portion of people in interracial relationships in the United States (Livingston & Brown, 2017). We found that SWM were significantly less likely to select profiles of women of color compared to profiles of White women when considering friendship, sexual encounters, dating relationships, or long-term committed relationships such as marriage. Established predictors of negative attitudes toward interracial relationships (e.g., religiosity, political beliefs) had no correlation with SWM's selection behavior in the app, but self-reported openness had a consistent correlation to higher odds of selecting women of all races.

Keywords: interracial relationships, geosocial apps, online dating

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About half of Americans' waking hours are spent in the presence of or interacting with other people (U.S. Bureau of Labor Statistics, 2016). Just like the majority of modern primates, humans have greater access to resources and protection from predators and the elements by living in social groups (Silk, 2001). Evolutionary psychologists suggest that the fundamental reasons humans organize into social groups are to ensure physical safety and success of passing on one's genes. Beyond basic evolutionary benefits, human social interaction makes it possible to have mutual exchanges of goods or services, to seek enjoyment or pleasure with others, to foster supportive friendships, or to develop romantic partnerships.

In personal relationships, there are many factors which influence with whom people identify as potential friends, sexual partners, or lifelong romantic partners. Among the strongest predictors for establishing these associations is the availability of others within one's social network or in-group (Choi & Tienda, 2017). One marker humans use to distinguish in-group members from outgroup members is race. Race is a socially constructed characteristic since there are no known genetic clusters that identify any certain race from all others (Smedley & Smedley, 2005). Even now that we know race is a social construct, people continue to use surface-level, phenotypic characteristics associated with race to delineate their in-groups from outgroups.

Starting with the displacement of Indigenous Peoples and American slavery, racial hierarchies have existed in the United States since before the country declared its independence. Racial minorities have experienced many forms of institutional barriers to freedoms such as chattel slavery, legally enforced segregation, voter suppression, housing discrimination, police brutality, mass incarceration, and other forms of oppression due primarily to their race (see

Kendi, 2017). Anti-miscegenation laws that existed in the United States through the 1960s forbade interracial marriages and have been criticized as being an attempt to secure and maintain unequal power for White, heterosexual, men (Thompson, 2009). Anti-miscegenation laws were officially declared unconstitutional in 1967 in the landmark case Loving vs. Virginia, but the majority of marriages in the United States continue to consist of two individuals of the same race (Alhabash et al., 2014; Taylor et al., 2012). While a number of critical laws to end institutional racism have been enacted in the United States, there continues to be barriers to true racial equality.

The advent of the internet has profoundly changed the ways humans connect with others. Online social networks now facilitate people's attempts to be socially integrated with in-groups and may partially or completely replace offline socializing (Crosier et al., 2012). The internet can expose people to others of various racial and ethnic backgrounds which can reveal or challenge unexplored racial biases. Among the newest technologies that connect people of diverse backgrounds are geosocial apps. Using smartphones, geosocial apps allow people to meet other app users based on whether they are within a certain number of miles from their location (Hall, 2014; Sprecher, 2009; Fox & Warber, 2014). If two users "match" by selecting one another by "swiping right" or tapping within the app, they are then able to mobile chat with one another and potentially set up meetings in person.

Research on partner selection has explored many different motivations that influence people to initiate relationships, but few studies have explored the effects of race on geosocial app behavior. It has been suggested that due to the repetitiveness and ease with which people can "swipe right" or "swipe left" to select or reject other users in geosocial apps, people likely make decisions mindlessly, relying on first impressions of physical qualities (David & Cambre, 2016;

Aaron, 2017). The fast-paced decision-making process common in geosocial apps is an area uniquely suited to exploring the effects of race on online relationship formation. The purpose of this study is to investigate how the selection behaviors of Straight White Men (SWM) are influenced by the perceived races of women on a pseudo-geosocial app while accounting for other prominent factors such as perceived age, physical attractiveness, and motivations for selecting potential partners. This group (i.e. SWM) is of particular interest since they have historically held the most social and political power in the United States (see Thompson, 2009), have reported high levels of openness to dating outside of their own race (Todd et al., 1992), and they make up the most common demographic in interracial marriages in the United States (Livingston & Brown, 2017).

Partner Selection

Evolutionary psychology suggests that humans are naturally social animals who seek out social ties that support their physical and emotional well-being (Buss, 2009). Indeed, choosing mates who are best suited to ensure the survival of one's genes through offspring appears to influence people's decision making in ways that may not be in conscious awareness. For example, research has shown that straight women's preferences for different attributes in a potential partner fluctuate across the menstrual cycle and whether they are seeking short-term or long-term partners (Pawlowski & Jasienska, 2005). In addition to human's innate desire to ensure the survival of their genes, there is evidence that meaningful relationships benefit people in many other domains in life. An analysis of data from the Harvard Grant Study of Lifespan Development suggests that people with healthy long-term relationships are more likely to live a longer, healthier life, have better cognitive functioning later in life, and experience higher levels of overall life-satisfaction and happiness (Vaillant 2008).

Research on relationship formation suggests that unconscious effects of proximity, exposure, and physical attraction help predict with whom people will start relationships. Another factor which may have unconscious effects on relationship formation is race. When trying to determine the morality, intelligence, or socioeconomic potential of possible partners, race has been shown to serve an influential—albeit unreliable—cue leading to prejudiced beliefs and responses (Miller et al., 2004). Understanding what influences partner selection is important while investigating people's behavior when presented with opportunities for same-race and interracial relationships.

Proximity

Research has shown that people who live or work in close proximity with one another tend to begin relationships more than with those who live farther away. A classic study at MIT established a basis for understanding *propinquity* (Festinger et al., 1950). Propinquity is the tendency for people to be attracted to and form relationships with others who are in close proximity with them physically, geographically (e.g., same neighborhood), or psychologically (e.g. shared beliefs, culture, experiences). In a study examining the principle of propinquity, Shin et al. (2019) found that shorter physical distance between people in a controlled environment significantly predicted male participants' preferences for female targets. This effect held true for physical distance in face-to-face interactions with a female confederate, and perceived distance in still images and videos. These studies demonstrate that perceived proximity or functional proximity to others appears to influence the likelihood of people to form relationships.

A recent study investigated how proximity between teenagers of various racial backgrounds may influence relationship formation in shared neighborhoods and schools (Kao et al., 2019). Using data from the Add Health in-school questionnaire which asked teenagers

enrolled in public schools to identify their closest friends (Harris et al., 2009), researchers found that the more diverse a school is, the more likely teenagers were to identify friends of another race (Kao et al., 2019). However, they found these students still had more friendships with peers of their own race suggesting race plays an important role in friendship formation beyond proximity alone. They also found evidence suggesting these trends continue into college but decrease on campuses with more racially diverse student bodies. These findings suggest that proximity plays an important, but not all-encompassing, role in relationship formation of youth and emerging adults.

Research in European schools has shown that, like their American counterparts, teenagers' relationship formation is influenced by both ethnicity and proximity to peers in schools and neighborhoods (Kruse et al., 2016). The unique history of segregation in the United States may have amplified these effects compared to Europe due to the physical structures of American neighborhoods and prevalent attitudes about race. Many people in the United States do not live in neighborhoods with physical proximity to those of other races due to both *de facto* conditions created by individual citizens' choices and *de jure* attempts by the government to keep neighborhoods racially segregated with effects that persist to this day (see Rothstein, 2017). Evidence suggests these conditions interfere with the chances of people developing interracial relationships due to the homogeneity of races in American communities and schools to this day. In turn, this can lead to potential other-race partners being less readily available than in fully integrated communities.

Exposure

Along with physical proximity, a phenomenon known as the mere exposure effect shows that a person's preference for a stimulus, such as a human face, tends to increase with repeated

exposure to that stimulus (Zajonc, 1968). This has been found to be true for both individual stimuli and categories of stimuli. For example, one experiment showed that exposure to faces of Black and Asian people increased the odds that White participants would report liking other Black and Asian faces they had not previously seen (Zebrowitz et al., 2008; see also Hamm et al., 1975). Other research has shown that exposure to different races in childhood and adolescence predicts increased willingness to date or marry someone of a different race as an adult (Shibazaki & Brennan, 1998; Emerson et al., 2002), and increased likelihood to find a person of another race in a speed-dating setting as a viable partner (Fisman et al., 2008). Additionally, women with early sexual experiences with a person of another race have been shown to be more likely to marry interracially later on (King & Bratter, 2007). However, other research has shown that in naturalistic settings in which there are higher proportions of minorities, some people display stronger preferences for those of their *own* racial in-group (Rae et al., 2015). Making it illegal to segregate residential neighborhoods and public schools has been shown to be an important step toward decreasing implicit and explicit racist beliefs as the physical distance between people of different races decreases (see Rothstein, 2017). However, plans to actively integrate churches, schools, and universities have been difficult to implement and many of those institutions remain largely segregated (Rothstein, 2017).

Research has shown that while online interactions have the ability to increase the diversity of people with whom a person interacts, the opposite is often true with more people's online interactions becoming less diverse over time (Hampton et al., 2011). So even when people of different races have more *opportunities* for interactions with each other, they may continue to have limited exposure to those of other races resulting in lower levels of preference for partners of another race and fewer interracial relationships.

Physical Attraction

Perceived attractiveness has been shown to be an important determinant of the assumptions and biases people hold about others. People tend to assume that attractive people are inherently more trustworthy, moral, talented, smarter, and happier than less attractive people (see: Webster & Driskell, 1983; Dion et al., 1972; Landy & Sigall 1974). These beliefs can affect others' attitudes and behaviors toward attractive people in a way that gives them what is known as "beauty privilege" which can earn a person unnoticed advantages over others (Kwan, 2010).

Attractiveness plays a significant role in people's romantic partner selection decisions and has been shown to be a reliable predictor of mate preferences for both men and women (Feingold, 1990; Eastwick & Finkel 2008). In one study looking at predictors of romantic interest, physical attractiveness was the only factor that predicted participants' interest in people from short video clips even when controlling for personality traits, and the assumed values of potential partners (Olderbak et al., 2017). Subjective attractiveness seems to be a strong driving force in interpersonal functioning with people preferring faces that are similar to their own (Penton-Voak et al., 1999). However, Schmid, Marx, and Samal (2006) created a way to measure the "objective" beauty of faces using geometric qualities including facial symmetry and "golden ratios." Researchers have found these objective standards of beauty are highly correlated with average ratings of subjective attractiveness and can often be used interchangeably in most situations (Bainbridge et al., 2012). The impact of physical attractiveness extends beyond intimate partner selection. For example, researchers have found that financial investors are influenced by beauty privilege when making investment decisions based on the attractiveness of companies' CEOs (Halford, & Hsu, 2014). So while many people are likely unaware of the

effects that physical attractiveness may have on them, it seems to influence them in consistent ways.

Assumptions about Race

Sociologists suggest that markers used to identify in-group vs. outgroup others may influence with whom people seek community or with whom they feel comfortable (see: Kao et al., 2019). One marker used to identify in-group vs. outgroup membership is race. Race is a socially constructed phenomenon which divides and classifies groups of people based on their physical appearance or outward phenotype. Fewer people express overtly racist beliefs than in the past, but implicit beliefs and institutional practices which maintain racial divides persist. Without knowing it, people may hold prejudices which label other races as lower-status, less intelligent, immoral, or even dangerous (see: Miller et al., 2004; Greenwald et al., 1998). The impacts of race on people's group formation and partner selection decisions will now be discussed in light of the unique history of race in the United States.

Race Relations in America

The United States has a long and troubled history of racial tension from before its establishment as an independent country. The 13th amendment declared the institution of slavery unconstitutional, then the Civil Rights Movement resulted in several major pieces of legislation in the 1960s which ended lawful segregation and implemented other protections against racist institutional practices which emerged after the Civil War. While these changes are to be applauded, racial disparities continue to exist to this day. Racial tensions have piqued recently with the re-normalization of racist rhetoric by politicians, demonstrations by overtly racist groups and causes (see Michael, 2017), and an increased awareness of police brutality towards people of color. Data show that there has been an increase in hate speech online and hate crimes

based on race, religion, or sexuality since the 2016 presidential election (Cohen-Almagor, 2018). It also appears that much of the increased racial tension has been initiated and maintained by those who stand to benefit from a system that unequally supports people who are straight, White, or male (Michael, 2017). Groups such as Black Lives Matter and the American Civil Liberties Union continue to advocate for the same types of changes that leaders of the original Civil Rights Movement called for over fifty years ago. Despite significant strides forward towards racial equality over the past several decades, the United States has clearly not yet become a fully integrated multiracial society.

A Shifting Racial Landscape

Although the early colonizers of North America were primarily White European immigrants, the population of the United States is becoming increasingly more diverse. In 2015, only 62% of the population was White compared to 84% fifty years earlier, and at some point between 2044 and 2055, that number will likely dip under 50% (Lopez et al., 2015; Colby & Ortman, 2017). According to estimates from the 2010 U.S. Census, the population of multiracial people is expected to triple in size by 2060 as more children are born to parents of different races (Colby & Ortman, 2017). By that time, other minority populations are also predicted to increase in size including a 42% increase in the Black population, a 128% increase in the Asian population, and a 115% increase of those who are Hispanic or of Latino origin (Colby & Ortman, 2017). Meanwhile, the percentage of the population of non-Hispanic White people will decrease by about 8% and this group will only make up 44% of the United States population (Colby & Ortman, 2017). These patterns suggest that large areas of racial homogeneity in the United States will continue to decline and that having regular interactions with those of other races may become increasingly common.

Interracial Relationships

One unique aspect of race-relations in the United States is its history of legal and cultural barriers for people who desire to date or marry interracially. Anti-miscegenation laws, segregated schools, and segregated communities have kept people of different races apart (see Rothstein, 2017). Since anti-miscegenation laws were declared unconstitutional in 1967, the rates of interracial marriage have risen from about 3% to as much as 17% in 2015 (Livingston & Brown, 2017). In addition to marriages, the rates of interracial dating (often facilitated by the internet) have also been rising (Madden & Lenhart, 2006). Passel et al., (2010) estimated that Asians were most likely to enter an interracial marriage (31%) followed by Hispanics (26%), Blacks (16%), then Whites (9%). Although the smallest proportion of people entering into new interracial marriages are White, they make up a numerical majority of interracial marriages because they are the largest racial group in America (Passel et al., 2010; see also Taylor et al., 2012). Of newly married interracial couples, 67% had one White partner (17% Hispanic/White, 15% Asian/White, and 11% Black/White) with the remaining 33% not involving a White partner (16% both non-White, and 17% "other"; Passel et al., 2010).

Attitudes toward interracial relationships have also been shifting in recent years. When asked about interracial marriage, the percentage of non-Black people who report that they would disapprove of a relative in an interracial marriage has declined from 63% in 1990 to only 14% in 2016 (Livingston & Brown, 2017). When examining White people's attitudes toward interracial relationships, Herman and Campbell (2012) found that about a third of people reported approval of dating relationships between Whites with Blacks or Asians. While these reported shifts in attitudes were tested by asking participants about hypothetical relationships instead of real-life situations which could unearth unspoken biases, the dramatic drop of overt disapproval of

interracial relationships may indicate a significant turning point for the overall acceptance Americans have for interracial relationships.

White People and Interracial Relationships

Since White people make up the largest racial demographic in the United States and are a part of as many as 67% of all new interracial marriage (Passel et al., 2010), their specific attitudes and decisions relating to interracial relationships can have a large impact on the way interracial couples come together. Herman and Campbell's estimate of those who would approve of a loved one being in an interracial relationship (33%) is about double the actual rates of interracial marriages (17%; Livingston & Brown, 2015) and much larger than the rate that White people marry interracially (9%; Passel et al., 2010). White men have reported more openness to personally befriending, dating, marrying, or having a child with a person of another race compared to White women (Herman & Campbell 2012). Of all the possible interracial pairings, White men reported being most open to have relationships with Asian women (Herman & Campbell, 2012) and their dating and marriage behaviors reflected that openness with more White man/Asian woman marriages than any other combination (Qian & Lichter, 2007).

Other research suggests that when people exclude potential partners based on race, White men most commonly reject Black women, and White women most commonly reject Asian men (Feliciano et al., 2009). These findings have been supported in non-academic research of online dating behavior conducted between 2009-2014 by the company OKCupid. By exploring users' online behaviors, they reported that White men were most likely to start conversations with White or Asian women, somewhat likely to start conversations with Hispanic or Latina women, and were unlikely to interact with Black women on the site (The OKCupid Blog, 2014). White women were most likely to start conversations with White men, and unlikely to communicate

with men of other races, especially Asian men (The OKCupid Blog, 2014). So while most White people have been shown to approve of *others* engaging in interracial relationships, they have reported that they personally had not, and would not seek an interracial relationship (Herman & Campbell, 2012). In other words, White people seem to be becoming more tolerant of others' choices to engage in interracial relationships, but their own preferences continue to be for same-race partners.

Barriers to Interracial Relationships

Despite increasing rates of interracial marriages, racism is still prevalent in United States culture. Overt racism (holding explicit beliefs about the inferiority or superiority of the races) has been declining among Whites over the past several decades (see McConahay et al., 1981). However, "new racism" and racial "color blindness" are relatively new ways in which White people maintain racially unjust status quos without explicitly addressing race as a basis for decision making (McConahay et al., 1981; Bonilla-Silva, 2013). These practices often take the form of White people opposing legislation or cultural shifts that would help rectify racial injustices of the past (McConahay et al., 1981). One factor that can make new racism difficult to address and change is that White people are often unaware that they are discussing racially charged issues and often become defensive or emotionally reactive when people of color point out the racial subtext of their words (see Bonilla-Silva, 2013; DiAngelo, 2011).

In a review of research about commonly held racist perceptions of romantic interracial relationships, Kenney & Kenney (2012) detailed many of the myths, stereotypes, and challenges interracial couples face. Yancey (2002) suggests that there are stereotypes that interracial relationships are inherently dysfunctional. Some researchers suggest that many people believe that those who pursue interracial marriages must have ulterior motives aside from traditional

ideals like love or companionship. For example, people may assume those in interracial relationships desire "exotic" sexual experiences, social advancement, to rebel against social norms, or seek domination over a romantic partner (see DaCosta, 2007; Thomas et al., 2003). The way these assumptions about interracial relationships manifest differs depending on the composition of the relationships, but Okun (1996) suggested that relationships including Black and White partners experience the most overt criticisms.

While many of the assumptions people make about interracial couples have largely been debunked (Yancey, 2002), interracial couples do face unique challenges not experienced by same race couples. These challenges may include navigating issues of racial identity, differing cultural values, family stress, and others (see Wehrly et al., 1999; Azouly & Mevorach, 1997; DaCosta, 2007). Challenges unique to interracial couples often become increasingly difficult to navigate as the degree of commitment increases. For example, interracial couples who have children report relationship distress as they try to negotiate how to raise multiracial children in a racially divisive society (DaCosta, 2007).

Factors Influencing Interracial Partner Selection

Although aspects of the social climate in America may discourage people from seeking interracial relationships, these types of relationships continue to be increasingly common (Livingston & Brown, 2017). In addition to the influences of proximity, exposure, and physical attraction on relationship formation, other factors such as implicit bias arise when people interact with people of different races. Using a series of images of people of different races, Greenwald et al. (1998) measured the amount of time it took for White people to associate positive words with people of different races. Using this Implicit Association Test, they found that even when White subjects reported no explicit racist beliefs in questionnaires, their reaction times were slower

when ascribing positive attributes to images of non-White people. While the validity and reliability of the Implicit Association Test have faced scrutiny (see Rezaei, 2011), it may be true that people hold implicit racial biases that can affect their behavior when interacting with people of other races. These implicit biases appear to apply in all types of interpersonal interactions and decision making. For example, research suggests that people invested less in companies whose CEOs were racial minorities (Halford, & Hsu, 2014). Implicit bias is also likely a factor contributing to well-documented, unfair, and discriminatory policing of racial minorities including the use of excessive force (Spencer et al., 2016). Implicit bias can also influence people in the context of dating, resulting in rejection of potential partners based on race without having had a chance to interact with them.

Implicit or explicit racial biases may have more or less effect on people's interracial relationships depending on the degree of intimacy of those relationships. Yancey (2007) reported that people tend to become less willing to engage in interracial relationships as they become increasingly more intimate (e.g., befriending to dating to marriage and/or child bearing; see also: Herman and Campbell, 2012). Yancey explained that casual relationships do not have the same implications for navigating family reactions to the relationship, dealing with societal approval or disapproval of the relationship, or making the racial identity adjustments necessary in more committed relationships such as marriage (Yancey, 2007).

Other research shows that as people of different generational cohorts grow older, they have decreasing rates of interracial relationships starting in emerging adulthood when they typically start to face questions of "settling down" and marriage (Joyner & Kao, 2005). Additionally, research on racial prejudice generally has shown that increased age predicts lower acceptance of people of other races (Glover, 1994). Even when people are involved in interracial

relationships, fear of family rejection or social stigma may impact how they navigate their relationships in a way that differs from same-race relationships. As recent as the mid-1990s, research has shown that adolescents in interracial relationships tend to hide their partners from their families at higher rates than those dating someone of their own race (Wang et al., 2006). Ideas about the social or family implications of being in relationships with a person of another race appear to play a unique and powerful role in preventing people from engaging in interracial relationships, especially as they grow in intimacy and commitment.

The difficulties unique to interracial relationships may be exacerbated when one partner is White and experiences White fragility. It has been suggested that White people have a greater inability to tolerate or deal with racial stress compared to other races in a phenomenon known as White fragility (DiAngelo, 2011). The effects of White fragility include defensiveness, hostility, or discomfort when faced with situations where race becomes salient (DiAngelo, 2011). White fragility may be especially strong when White people are from communities with a more overtly racist history (e.g., the South; see also Zebroski, 1999), are politically conservative, identify as "very religious," or if they are shielded in other ways from having to think about racial issues (see Dawkins, 2004; Frankenberg & Orfield, 2007). It has been suggested that White fragility is common among White people who engage in "colorblind" or new racism because they rarely speak openly about race (see DiAngelo, 2011; Bonilla-Silva, 2013). The degree of White fragility and overt racism among White men can change and has been shown to be lower for those who are more educated, of a higher socioeconomic status, are politically liberal, and who reject certain common religious beliefs or attitudes (Herman & Campbell, 2012).

Education and SES

Relationship theorists have suggested that race, education, and SES all play a part in the power dynamics of interracial couples (Zhang & Hook, 2009). Some research has found small effects for how increased levels of education increases acceptance White people have for those of other races (Glover, 1994) and increases the likelihood of marrying someone of another race (Passel et al., 2010). When looking directly at the effect of SES on interracial relationships, Fu (2006) found that the most important factor for the stability of marriages was that each partner had about an equal SES when the relationship was formed. Yancey (2007) suggests that with increasingly intimate relationships with White people comes an elevating of a racial minority's perceived SES while not eliminating their own racial identity. In a study on attitudes toward interracial relationships, higher levels of SES and education have been correlated with more openness toward interracial marriages (Herman & Campbell, 2012). Considering the mixed findings about the impact of SES and education on interracial relationships, both are worth considering in future research.

Religiosity

People who identify as highly religious have been shown to be reluctant to engage in romantic interracial relationships (Yancey, 2007) possibly due to aspects of Christian theology linked with racism of which suggest interracial relationships are "sinful" (Kirkpatrick, 1993; Hall, 2000). Research has also shown that those who hold strong beliefs in the protestant work ethic tend to reject or unfairly criticize racial minorities (Glover, 1994). However, there are mixed findings on exactly how religiosity effects attitudes toward interracial relationships. A study by Perry (2013) showed that while evangelicals and biblical literalists are more likely to oppose interracial relationships, Whites who engage in religious devotion more frequently and

who attend church in congregations which are racially diverse may be more supportive of interracial relationships than previously thought.

Political Leanings.

About 44% of White men identify as Republican (i.e. America's major conservative party) compared to only 36% of White women (PEW Research Center, 2015). Research suggests that those who are highly conservative have less positive racial attitudes generally (Lye & Waldron, 1997), and are less likely to date interracially (Eastwick et al., 2009). Additionally, many of the factors associated with identifying as Republican are the same as those associated with racist attitudes. For example, 55% of White men with some college or less, and 68-70% of Mormon and White Evangelical Protestants are Republican or lean Republican with age having little effect on these groups (PEW Research Center, 2015). When looking at those who identify as liberal, 57% of people with post-graduate degrees, 61% of those who identify as religiously unaffiliated, and between 56-80% of non-White people identify as or lean Democratic (i.e. America's major liberal party; PEW Research Center, 2015).

Some social psychologists argue that the divides between who identifies with which political party may worsen if White people rally behind the Republican Party and racial minorities rally behind the Democratic Party as racial demographics continue to shift (see Grossman, 2016). Research has shown that politically conservative people tend to put stronger emphases on looks than liberals do in decision making. For example, one study showed that candidates who looked more "stereotypically Republican" polled better among conservatives whereas no such effect was found when examining liberals (Olivola et al., 2012). Indeed, the demographics of the Republican Party are reflected when looking at who won the 2018 midterm elections in which White men comprised nine out of ten new representatives in the House

(Bump, 2018). Conservatives preference for White candidates may indicate a tendency to hold racial biases against minorities and could be associated with lower rates of pursuing interracial relationships (see Herman & Campbell, 2012).

Region

Another factor influencing how people view interracial relationships is the region of the country they are from. When measuring attitudes toward interracial relationships with increased intimacy and commitment, researchers have found that those from the American South are less likely to have positive impressions (Herman & Campbell, 2012). Southern states also have a longer history of explicitly racist policies and practices against Black people starting with chattel slavery and continuing today with the lingering effects of segregation and redlining. Studies of recent presidential elections have shown that Southern states' voting was fueled by high levels of racist resentment (Knuckey & Kim, 2015) and high anti-immigrant feelings toward Hispanic and Latinx people (Hooghe & Dassonneville, 2018). The political history of the South and the resurgence of racist feelings following the presidency of Barrack Obama and the rhetoric of politicians popular among White Southerners could all help explain why this region might have uniquely negative attitudes toward people of other races, including forming relationships with people of another race.

Interracial Relationship Outcomes

Research has shown that the mental health and relationship quality of interracial couples are impacted by many political, social, and cultural factors affecting minorities in the United States today. Some researchers suggest that legal barriers continue to interfere with some interracial couples' pursuit of marriage. They argue that there continues to be *de facto* restrictions against interracial marriages with Latinx people who also happen to be

undocumented immigrants because of strict immigration policies (Schueths, 2015). A recent qualitative study highlighted social barriers to forming and maintaining interracial relationships when couples' experienced family rejection of their marriages, negative perceptions from society on their marriages, and differential treatment of their marriages from those in their families and communities (Lewis, 2013).

Despite the unique social, cultural, and legal challenges interracial couples face, there are mixed findings on whether these challenges are consistently connected to either better or worse mental health or relationship outcomes such as relationship satisfaction or divorce. There is evidence that suggests young people who date interracially are *more* likely to experience depressive symptoms than those who remain single or date someone of their own race (Miller, 2017), and interracial married couples have been found to be at elevated risk for intimate partner violence (Brownridge, 2016). One study found that certain combinations of races in heterosexual unions such as White females with Black males had higher risk of divorce than same-race marriages while others such as non-White females with White males have equal or lower risk of divorce (Bratter & King, 2008). Other research done by Troy, Lewis-Smith, and Laurenceau (2006) found that couples in interracial marriages had no significant differences between relationship quality or attachment styles compared to couples in same-race relationships and that they actually reported *higher* relationship satisfaction than those in same-race relationships. Multiple studies suggest that the relationship outcomes of married interracial couples are virtually the same as they are for same-race couples even though the stressors on the relationships may be different (Poulsen, 2003; Negy & Snyder, 2000; Root, 2001; Yancey, 2002). A meta-analysis showed that being in a same-race relationship has small but significant correlations with positive relationship interactions such as having more friendly nonverbal

behavior and feeling less negative affect (Toosi et al., 2012). These effects may vary depending on factors like SES and education which affect power dynamics which make it easier or harder to dissolve unhealthy relationships (Fu, 2006). While many people may continue to believe in the stereotypes associated with interracial relationships, society's attitudes have already started to shift toward more tolerance for these unions (Herman & Campbell, 2012), and those attitudes are likely to continue to improve as more people are educated about the actual outcomes of interracial relationships instead of inaccurate assumptions (see Yancey, 2002). Considering the United States' long history of racial tension and current unrest over racial issues, it seems that understanding and facilitating better cross-racial interactions is as important for our country as it has ever been.

The Internet and Human Interaction

Since the early 1990s, the internet and other technologies designed to connect people have been progressing so rapidly that it is difficult to estimate the impact that they have had on human connection. These technologies allow people to interact with others from different geographical regions, belief systems, and racial and ethnic backgrounds. Early social media sites such as MySpace established that the internet was not just a place to acquire information but also to interact with other people. Some of the most visited social media sites today include Twitter, Facebook, Instagram, and Snapchat which allow users to interact with people all over the world. Early internet researchers disagreed on whether the internet would benefit or harm relationship formation or maintenance. Some suggested that if people used online communication in place of face-to-face human interaction, they would experience loneliness and isolation (see Zubof, 1988). However, early studies on the impact of the internet on people's relationships with others

showed that internet users reported the same amount or more offline interactions with others (e.g., romantic partners, friends) than those who did not use the internet (Sanders et al., 2000).

For better or worse, people can now connect with others online who have seemingly endless combinations of ideas and beliefs. However, more often than not, people tend to spend time online interacting with likeminded others in virtual "echo chambers" which result in reinforcing previously held opinions and biases (see: Karlsen et al., 2017). People seem to prefer the comfort of interacting with others who think, feel, act, and even look like they do themselves. When people do interact with someone who comes from a different background or belief system, the unexpected result is often having their preconceived beliefs and attitudes reinforced through "disconfirmation bias" which then reinforces desire for online echo chambers (Karlsen et al., 2017). It seems that access to more types of people may have the paradoxical effect of contributing to people holding more tightly to the worldviews that they began with while seeking out others who share their own values, beliefs, and background.

Online Dating

The internet has undeniably altered the way that humans interact with each other, and it has begun to affect patterns of courtship and dating (O'Sullivan, 2015). In the early days of the internet, many people worried about the dangers of organizing real-life meetings with strangers met online. In spite of these concerns, websites specifically designed to meet potential dating partners online such as Match.com started to rise in popularity beginning in the early 1990s. Internet dating sites are designed for people to meet others online for the purposes of initiating some form of intimate relationship (Hardey, 2002). Dating sites, and the internet as a whole, may have gained such popularity in part by providing a way to maintain one's own boundaries and identity while making intimate connections with others in ways that are difficult to accomplish

offline (Hardey, 2002). However, research has shown that internet dating seems to have both positive and negative effects on relationship outcomes (see Finkel et al., 2012).

In an attempt to improve relationship outcomes for their users, most traditional online dating sites, such as Match.com, utilize questionnaires and sophisticated algorithms to generate compatible "matches" between users which serve as a go-between for starting interactions between people. Some dating sites are designed to match people on specific characteristics such as preferred hobbies (e.g., equestriansingles.com), religion (e.g., christiansmingle.com), or partner racial preferences (e.g., blackpeoplemeet.com or interracialcupid.com). While these types of dating sites vary, they tend to operate on the principle of pre-determining how emotionally or socially compatible users would be before they are matched and given means to talk to one another directly.

With the introduction of more sophisticated GPS, mobile, and smart phone technology, a new form of online dating utilizing location based matching emerged. These geosocial apps (which include Tinder, Grindr, Bumble, and others) forego algorithms or other means of determining compatibility between users. Instead, they work by connecting people in a specified geographic proximity to one another. In most geosocial apps, users see photos of other users and relatively brief personal descriptions before choosing whether or not to select that user by "swiping" or tapping the phone screen. If both users select one another by "swiping right," they "match" and are given means to begin interacting with one another directly within the app. Unlike traditional dating sites, there are no algorithms or questionnaires built into geosocial apps that are used to predict potential compatibility with other users. Rather, users are left to their own judgment—sometimes split-second judgment—to determine if they want to swipe right and

indicate interest in connecting with another user, or swipe left and reject them based on relatively little information.

The practice of meeting others online is increasingly common. At the same time technology has facilitated new ways to meet and communicate with others, attitudes about interpersonal relationships have also been in flux (see Bogle, 2008). As geosocial apps have foregone algorithms used by online dating sites to prioritize long-term compatibility, the attitudes of young adults who are most likely to use geosocial apps also seem to deprioritize committed relationships like marriage. Emerging adults are delaying marriage compared to previous generations (Payne, 2019), and they have increasingly positive views towards things like casual sex and remaining single than previous generations (Bogle, 2008). While the impacts of online dating on relationship outcomes are not yet fully known (LeFebvre, 2018), the shifts in the ways technology facilitates relationship formation seem to mirror the shifts in attitudes about relationships and they likely influence one another.

Perceptions, Motivations, and Results of Using Geosocial Apps

The earliest geosocial apps that were created targeted specific demographics for specific purposes. For example, one of the earliest geosocial apps, Grindr, was designed for men looking to have casual sexual encounters with other men. This, and other similar apps, became popular because they helped remove the awkwardness or difficulty of finding others offline who were interested in same-sex sexual experiences (Miller, 2015). Newer geosocial apps cater to people of all sexual orientations and can specifically cater to all types of connections such as one-time hookups (e.g., casualx), sexual encounters with two other people (e.g., 3nder), friendships (e.g., bumble), or even for dog owners to set up “doggy play dates” (e.g., Tindog).

One of the most popular dating apps, Tinder, has been used by people with a variety of motivations ranging from friendship to marriage. Tinder reported that their app generates twenty-six million matches a day from users swiping 1.6 billion times daily (Tinder, 2015). Although Tinder has recently made attempts to rebrand the app by advertising the number of long-term relationships or marriages between its users, the common perception persists that Tinder is primarily for people who want casual sexual encounters (LeFebvre, 2018). In a study of 395 young adults, 51.5% reported that they believed Tinder was primarily for finding partners for sexual hookups (LeFebvre, 2018). However, only 5% of respondents reported that finding hookups was what personally drew them to using the app and 8.9% said the desire for relationships is what motivated them for logging on. About a third of respondents (33.5%) reported that Tinder is for dating, 15% said it is for meeting people, and a surprising 37% reported that they had begun a committed dating relationship with someone they met through the app (LeFebvre, 2018).

There are several factors relating to the nature and history of geosocial apps and online dating generally that may make it difficult for Tinder or other geosocial apps to distance themselves from being perceived as hookup apps. People who begin relationships online have reported feeling less committed to their relationships and that their relationships tend to be less serious compared to those who meet offline (Cornwell & Lundgren, 2001). This could be in part due to the first geosocial apps being specifically designed to facilitate hookups (Miller, 2015), and the fact that those who look for casual sexual experiences online tend to find them (see Braithwaite, Aaron et al., 2015; Braithwaite, Givens et al., 2015; Owen & Fincham, 2011; Vanderdrift et al., 2012). Additionally, when two users match on geosocial apps the most common form of interaction they have is facilitated through in-app text messaging. Research has

shown that in some populations, electronic messaging based primarily on texting predicts increased sexual risk taking such as an increased number of unique sexual partners (Frank et al., 2010). Since many people specifically seek out the ease of chatting with others on platforms that facilitate text communication (Sumter et al., 2017), and many people continue to assume geosocial apps are primarily to find hookups (LeFebvre, 2018), using geosocial apps may be perceived as hookup apps no matter how they are branded or marketed to end users.

Online Disinhibition Effect

While many social behaviors and dating norms that exist offline are also present online, some unique factors exist online which may exaggerate or otherwise alter people's typical behavior when using technology to communicate with others. The Online Disinhibition Effect describes factors that exist that may lead people to be more open, honest, or genuine with others online, or that lead to more overtly racist, threatening, vulgar, or rude behavior than individuals would typically have offline (Suler, 2005). Some of the components of online communication that lead to online disinhibition are relative anonymity, asynchronisity of communication, solipsistic introjection, and dissociative imagination (Suler, 2005).

When individuals online feel anonymous, especially if some aspects of their user profiles are intended to hide their identity or mislead others, they may feel that they can "get away with" behaviors that they could not in person. They may take more risks with being emotionally vulnerable, or they may believe their more socially unacceptable actions would have fewer consequences. Asynchronicity of communication allows users more time to craft responses to other people online. This can lead people to attempt to present themselves in ways that are less authentic than in face-to-face interactions, or to allow people to avoid feeling social pressure which could lead them to say or do things which are impulsive or embarrassing. Solipstic

introjection and dissociative imagination may combine to create feelings of false intimacy when individuals lose a sense of their personal boundaries and ascribe characteristics to other users such as what they sound like or look like, or fabricate a personality for other users with no concrete basis in reality. Suler (2005) suggests that these factors combine in the online disinhibition effect in ways that may lead people to believe their actions online are completely detached from their "real-life" offline. This could result people to intentionally or unintentionally creating one or more "alter-egos" online that behave noticeably different than how those people behave offline. Individual differences in people's personalities and mental statuses also play an important role in how online disinhibition effects their behavior ranging anywhere from little to no effect to dramatic differences between a person's behavior online compared to offline (Suler, 2005).

Within the context of geosocial apps, online disinhibition may manifest itself in various ways. Some users may communicate in ways that they would not in face-to-face interactions such as beginning conversations with insults, deception, or aggressive sexual comments. The online disinhibition effect may also facilitate enough time and emotional distance to help reduce anxiety associated with interacting with others and generate a greater degree of vulnerability than would have occurred offline. The online disinhibition effect, especially when in the context of using geosocial apps that specifically cater to people interested in having sexual encounters, may create an atmosphere in which relative strangers quickly begin "sexting," or sending "nudes" or "dick pics." For other users who use geosocial apps in the hopes of developing other types of relationships, online disinhibition may help facilitate quicker disclosures and emotional intimacy than would typically occur offline. The online disinhibition effect may also minimize common

feelings of anxiety that occur when White people interact with people of other races and thus facilitate conditions that would lead to more romantic interracial pairings (see DiAngelo, 2011).

Researchers have begun to acknowledge that these pre-interaction processes are impacting modern relationships in ways that are not yet fully realized (LeFebvre, 2018). While little research has yet investigated the effects interactions on geosocial apps have on people before they meet offline, the dynamics created by the online disinhibition effect may cause significant discomfort or frustration for users of these apps, especially when users' motivations are not the same.

Swipe Right or Swipe Left?

While geosocial apps provide a technologically advanced way for people to interact, the patterns of partner selection follow principles first articulated by Darwin (see Buss, 2009 for a contemporary understanding of Darwin's principles), and have been found to be replicated in the distinct behavioral patterns of men and women on Tinder (Tyson et al., 2016). Researchers have shown that men are more likely to select potential partners in the apps than women are (Tyson et al., 2016). Since males typically do not carry the burden of pregnancy and child-rearing, evolutionary theory suggests that men attempt to find a higher number of potential romantic or sexual partners than women to increase their chances of having offspring. Likely due to the sheer volume of selections men make in geosocial apps, they tend to have more matches on average than women suggesting that women are more judicious with whom they select on geosocial apps (Tyson et al., 2016).

After selections are made, men tend to message fewer of their matches in the app with shorter initial messages compared to women (Tyson et al., 2016). With such little information provided from men in initial communications, their messages would not likely provide clear

intentions for the women they message. This often results in increasingly cautious behaviors from women, who have evolutionary reasons to be carefully selective with potential male partners. These patterns suggest men tend to manage the uncertainty of interacting with women after initial matches are made, whereas women may be more judicious at each stage of the interacting in geosocial apps.

Research suggests that many people may use geosocial apps because it seems easier to interact with others whom they find attractive than if they were to interact with them face-to-face (Corriero & Tong, 2016). Research has shown that having a profile photo is an important factor in obtaining matches for both men and women and that when more than one photo was associated with the account, the odds of the profile being selected by others significantly increased (Tyson et al., 2016). When multiple photos show a person at multiple angles or different lighting, users may be more confident about how other users "actually" look, and may be more likely to interact with them. Having multiple photos may also reduce users' concerns about getting "catfished" or deceived by profiles which lie or obscure some aspect of the user who owns the profile. Additionally, incorporating detailed and flattering information about oneself in one's profile may increase the odds of being selected by other users. This was found to be especially true for men's profiles (Tyson et al., 2016), likely due to women being more careful with their selections.

One thing common to all geosocial apps is that people are exposed to all other users in a certain proximity and are often only limited by the reported gender or sexual orientation of other users. Depending on where people use the app, they could potentially have interactions with people with greater varieties of interests, values, racial backgrounds, or belief systems than algorithm-based dating sites might typically facilitate. People may struggle to determine the

intentions or motivations of other users on geosocial apps if they are exposed to people with different ideas about friendships, dating, sex, and marriage. Additionally, due to the fast paced and repetitive nature of using geosocial apps, some users may have no specific desire or intention to create new connections with other users, but instead use the app for entertainment or to stave off boredom (see Aaron, 2017; David & Cambre, 2016). This could result in people using the same geosocial app for vastly different motivations such as seeking casual sexual encounters, finding a marriage partner, or to just pass the time. While many different motivations for using geosocial apps have begun to be identified (see Aaron, 2017), questions about what motivates people to select or reject specific accounts is still understudied. Given previous research (e.g., Tyson et al., 2016), selecting other users' profiles likely varies with combinations of information about age, race, SES, number of photos, stated hobbies and other information contained in users' profiles.

The Current Study

Straight White Men (SWM) make up one of the largest portions of interracial relationships in the United States today (Passel et al., 2010) and are also more likely to fit demographics associated with increased racist views and intolerance for interracial relationships (Herman & Campbell, 2012). The purpose of this study is to determine what impact the perceived race of potential female partners has on the selection behavior of SWM for expressing interest in women in geosocial apps. This group is of particular interest since they have historically held the most social and political power in the United States (see Thompson, 2009), and have high variability of education levels, SES, political party affiliation, and religiosity. They have also reported high levels of openness to dating outside of their own race (Todd et al., 1992), and been shown to indicate approval of more profiles on geosocial apps and initiate more

conversations with matches than women do (Tyson et al., 2016). However, White people's willingness to engage in interracial relationships has been shown to diminish with increased seriousness and commitment (Herman & Campbell, 2012; Joyner, & Kao, 2005), and some populations keep their interracial romantic relationships hidden from family members (Wang et al., 2006). This suggests that SWM's motivations for interacting with women of other races on geosocial apps may be driven by desires to connect in ways that involve low levels of commitment. The current study will also investigate if the rate SWM select women of different races changes when given specific motivations with varying degrees of commitment. Little research to date has looked at a single sample of both SWM's reported openness to interracial relationships and observed partner selection behaviors with multiples races. This study will seek to do so and if selection behaviors differ based on race when given motivations with increasing levels of commitment, racist attitudes could potentially help explain these effects.

Research Questions and Hypotheses

There are two main research questions: 1. How do race and motivations for matching relate to the selection behavior of SWM using geosocial apps? and 2. Do levels of self-reported openness to interracial relationships or established predictors of racial bias better predict the selection behavior of SWM in geosocial apps? The specific motivations examined, in order of escalating commitment, are likelihood of selecting women to pursue a) friendships, b) casual sexual experiences, c) dating relationships, and d) long term relationships such as marriage with women of four different racial/ethnic groups (e.g., White, Black, Asian, Hispanic).

The following hypotheses will be tested for question 1:

Hypothesis 1.1- In line with previous research, SWM will select images in a way that

disproportionately favors White women compared to Asian and Hispanic women and much more than Black women when examining all motivations for using geosocial apps.

Hypothesis 1.2- SWM will select fewer profiles as they are presented with motivations with increasing levels of commitment (e.g., many images will be selected for befriending women, few for pursuing long-term relationships/marriage).

Hypothesis 1.3- The decline in selecting images in rounds with motivations with higher levels of commitment will be steeper for profiles of women of color and largest for profiles of Black women.

The following hypotheses will be tested for question 2:

Hypothesis 2.1- The total number of affirmative selections of profiles of women of color will increase for SWM who have the following factors: a) higher annual incomes, b) lower levels of religiosity, c) more education, d) politically liberal, and e) not from the American South.

Hypothesis 2.2- SWM with high self-reported openness to interracial relationships will be more likely to select women of color in the pseudo-geosocial app.

Hypothesis 2.3 - When comparing self-reported openness to interracial relationships and predictors of racial bias, the established predictors of racial bias will be a more consistent predictor of selecting women of color than self-reported openness.

Methods

The research questions for this study deal with issues of race and gender. The primary author on this study is a straight White man. At various stages of designing and conducting the study, people with identities that differ from the main researcher – including White women, queer people, and women of color – were consulted to address issues that would benefit from

alternative perspectives. The collective "we" will be used to signify the collaborative nature of the processes that resulted in the study as described below.

To answer the research questions outlined above, we recruited a pool of SWM who provided data on partner selection by interacting with a pseudo-geosocial app. We created a pseudo-geosocial app using Qualtrics survey software and forty images of women with approximately equal attractiveness which were obtained from the 10k American Faces Database (Bainbridge et al., 2012). The creators of this database used the Google search engine to find images of thousands of faces online that were of high enough quality to be useful in research. The authors of the 10k American Faces Database subsequently created a "Surfer Tool" to find images that match a combination of many specifications. To create the "Surfer Tool," they used a sample of 337 people to evaluate a subset of 2,222 images from the database which were coded with specific qualities (Bainbridge et al., 2013). With permission from the authors of the original study, we used this tool to identify images to be used in the current study which met the following criteria: the person in the image was coded as a) female b) between 18-35 years old c) appeared to be one of the four key races under investigation (Asian, Black, Hispanic, and White) and d) was rated between 3.25 to 5.0 (out of 5) in attractiveness.

The tool identified 13 Asian women, 20 Black women, 16 Hispanic women, and 132 White women who fit these parameters. Upon inspection, we determined that the images produced in the Asian category all appeared to be Southeast Asian (e.g., originating from regions such as Japan, China, Korea). Researchers have pointed out that 'Asian' "is an imprecise term" due to a complex political and social history of Asian Americans (Chen & Buell, 2018, p. 609). Since the people who were asked to code the images were not academics, they likely relied on stereotypical facial features to determine if a person was Asian or another race. Similarly, all of

the images of Hispanic women appeared to have brown skin tones as opposed to lighter skin tones which could have been associated with women who might identify as White racially and Hispanic ethnically, or darker skin tones that might be more common for women who identify as Afro-Latina.

Using the images identified by the selection tool, we identified 10 images from each racial category for use in the pseudo-geosocial app to collect data. Asian women had the fewest usable images, so we first compared their attractiveness scores to the scores of Hispanic women. We eliminated two images of Hispanic women who were celebrities, then the images with the most similar attractiveness scores were selected from both Asian and Hispanic photos to yield the first 20 images. Once images of Asian and Hispanic women were selected with the nearest to equal levels of attractiveness that was possible, we selected 10 images out of the images of Black women with the same considerations. The large number of usable images of White women required additional decisions to select the 10 images used in the final pseudo-geosocial app. To decide which images of White women to use, we began by determining target attractiveness scores that would best match the other three sets of images. We did not consider any images of White women that did not have the specific attractiveness scores that were predetermined by the scores of the other three races. Next, we removed any images of celebrities, images that were skewed, or images of poor photo-quality (e.g., granular) from consideration. Finally, if multiple images were available at each predetermined score, we selected images which best replicated the ratio of women who were smiling with teeth or closed lips as was present in the other sets of images.

Due to a data collection error in the survey, one image (the photo of the 7th most attractive Asian woman in the pseudo-geosocial app), had significant rates of missingness (e.g.,

57% missing rate). Upon inspection, this image was never selected by participants in four out of five stages of using the pseudo-geosocial app. It appears that the image was inconsistently skipped or responses were not recorded due to some type of technical glitch. To account for the non-random missingness in this item, we dropped all recorded and missing responses for that image in the four stages affected. The final number of images used for analyses included 40 images in the first stage of data collection, then 39 images (9 Asian women, 10 Black women, 10 Hispanic women, and 10 White women) that SWM responded to in each following stage of the pseudo-geosocial app. No other images of any race were missing more than 1.25% of responses at any stage of data collection.

Participants

Participants from throughout the United States were recruited online using CloudResearch survey system (formerly MTurk Prime). CloudResearch is a sophisticated data collection platform which was designed to address problems that were common to Amazon's Mturk. Specifically, they help researchers target specific demographics and find participants who have proven to be reliable in completing other studies (Litman et al., 2017). Additionally, due to different payment and compensation structures, they are also able to recruit people from different income brackets.

Selection criteria for the present study included being single, straight, White, cisgender, male, over 18 years old, and under 35 years old. We determined sample size based on analyses proposed to the dissertation committee who approved the methods. In order to obtain good model fit and accurate estimates of the specific coefficients of interest within the planned statistical model, we used an online power calculator which suggested a minimum of 100 participants (Soper, 2019). We also did a Monte Carlo study of model fit which suggested a

sample of approximately 400 participants (Muthén & Muthén, 2002). Since a priori estimates of power are often difficult to obtain, we aimed to recruit between 500-600 participants to complete the study.

CloudResearch recruited 1311 individuals who would likely meet inclusion criteria for participation. These individuals then underwent additional screening in our Qualtrics survey which verified their age, race, gender, sexual orientation, relationship status, and if they had used a geosocial app at least once before in their lifetime. Of the 1311 participants recruited by CloudResearch, we excluded 719 individuals for not meeting full inclusion criteria resulting in 592 participants. An additional 74 individuals were excluded because they did not complete the survey as indicated by Qualtrics labeling their surveys as "not finished." This resulted in a total of 518 participants who completed the survey and were included in analyses.

Ages of participants ranged from 18-34 years old with a mean of 26.6 years old and a median age of 27 years old. No participants were included who reported being currently married. The majority of participants reported being single (n=418, 81%) with the rest being in a different type of committed relationship (e.g., dating; n=69, 13%), divorced/widowed (n=24, 5%), or separated (n=7, 1%). All participants were recruited in the United States with 34% of participants from the East Coast (n=175), 26% from the Midwest (n=133), 20% from the South (n=103), 13% from the West Coast (n=65), and 8% from the Mountain West (n=41). The regions were dummy coded for "South" (19.8%) or "not South" (80.2%) for analysis due to effects of region on racial preferences found by Herman & Campbell (2012).

Participants also reported their highest level of education selecting from "Did not graduate high school" (n=20, 4%), "High school diploma/GED" (n=150, 29%), "Some college" (n=186, 36%), "Bachelor's Degree" (n=126, 24%), "Advanced Degree" (n=33, 6%), and 3 did

not respond (<1%). The estimated annual incomes of participants in the sample were "$0-$15,000" (n=73, 14%), "$15,001-$30,000" (n=129, 25%), "$30,001-$60,000" (n=174, 34%), "$60,001-$100,000" (n=95, 18%), and "$100,001+" (n=47, 9%).

The majority of participants reported their religious affiliation as either some type of Christian (n=233, 45%) or religious "nones" (i.e., atheist, agnostic, or not affiliated; n=230, 44%). The remaining 11% identified as some other religion (i.e., Jewish, Muslim, Buddhist, or other; n=55; see Table 1).

To be included in the sample, participants had to report using geosocial apps at least once before participation in the study. When reporting their current frequency of use 16% reported that they use geosocial apps more than once a week (n=85), 17% use them about once a week (n=88), 19% use them about once a month (n=97), 11% use them 2-3 times a year (n=58), 5% use them about once a year (n=28), 15% use them less than once a year (n=79), and 16% never use them (n=82).

The demographics of those recruited for participation match the age range of men who use geosocial apps the most (Aaron, 2017; Sumter et al., 2017) and are most likely to have high rates of selecting profiles of women in geosocial apps which would provide wide behavioral variability to investigate in the analyses. Participants completed the Qualtrics survey in an average time of approximately ten minutes and were paid the fair market rate for their time as determined by CloudResearch.

Procedure

After participants reported demographic information necessary for determining study eligibility, informed consent was obtained. Participants were then granted access to the full Qualtrics survey accessible on either desktop or mobile devices. Within the survey, participants

interacted with a pseudo-geosocial app containing the 40 images obtained from the 10k American Faces Database following the procedure described above (10 images of women from each race under investigation). All measures besides those to determine study eligibility were included after participants had completely finished the portion of the study using the pseudo-geosocial app. This was done to avoid cueing participants about the research questions related to racial preferences which could have altered their natural behaviors.

Measuring Geosocial App Behavior

The majority of the survey and data collection occurred within a pseudo-geosocial app called "Breakr" which was designed within the Qualtrics survey. Participants were told that the app was for research purposes only and they would not actually be matched to any of the women in the images in the app. No deception was used in the study design. We used the name "Breakr" along with a graphic of two ice-cubes, to suggest that the app is for "breaking the ice," or meeting new people, without explicitly priming participants to use the app for a specific motivation (e.g., dating, friendship, sex). A brief description was given about how to select images of the women participants were interested in or not by tapping the right side or left side of each image to select or reject the woman in the image. This type of interface closely resembles how most real geosocial apps function which often use taps or "swipes" to select other users' profiles. While every participant reported having used a geosocial app before and was likely familiar with this type of functionality, we included a green checkmark to the right of each image and a red X to the left to help ensure participants remembered how their taps would signify selecting or rejecting the images.

The study was designed so that every participant would provide five responses to each of the 40 images of women resulting in 200 points of data for analysis. Participants were presented

with force-choice items which involved selecting or rejecting each image in 5 separate rounds or stages: one general round and four prompted-motivation rounds. In the first round, participants were told to use the app "just as you would other geosocial apps like Tinder, Bumble, Hinge, etc." This was done to capture normative behaviors without prompting specific motivations. In the other rounds, participants were specifically prompted with a certain motivation for using the app. In each of the four prompted-motivation rounds, the interface was exactly the same as the general round and all 40 images were presented in the same way as the first round. The only difference was that participants were told to base their selection decisions on specific motivations given between rounds of using the pseudo-geosocial app. Participants interacted with the app and based their tapping or selection decisions for each images on the following prompts: (1) "This time, only tap right if you open to pursuing a friendship with the woman in the photo," (2) "This time, only tap right if you are open to pursuing a dating relationship with the woman in the photo" (3) "This time, only tap right if you are open to pursuing one or more sexual encounters with the woman in the photo," and (4) "This time, only tap right if you are open to pursuing a long-term committed relationship (such as marriage) with the woman in the photo." An abbreviated reminder of the motivation was included at the top of the screen as participants tapped through images to help ensure participants continued to respond based on the correct prompt. The images were presented in randomized orders in each round to control for ordering effects.

Determining Demographics, Religiosity, and Explicit Racial Preferences

After participants finished all five rounds of interacting with the pseudo-geosocial app, they were asked to complete items related to their demographics, religiosity, and explicit racial preferences for different types of relationships. These items were reserved for the end to avoid

cueing participants to specifically consider race or guess at our research questions which could have impacted their selection behaviors within the pseudo-geosocial app.

We used several measures which were adapted from the work of Herman & Campbell (2012) which looked at attitudes toward interracial relationships. Since research has shown that those who hold conservative political beliefs have less positive racial attitudes generally (Lye & Waldron, 1997) and in the context of romantic relationships (Herman & Campbell, 2012), participants' political affiliation was measured using a 5-point Likert scale. Self-identified conservatives made up 36% of the sample (n=50 "Very Conservative", n=136 "Conservative") and self-identified Liberals made up 19% of the sample (n=63 "Liberal", n=37 "Very Liberal"). A plurality of participants reported being "Moderate" (n=232, 45%). When responding to a separate item which asked participants their party affiliation, 54% were Republican or lean Republican, compared to 44% who were Democrat or lean Democrat. The trends of political ideology and party affiliation are similar to those reported by PEW for this population (Doherty et al., 2018).

Participants identified primarily as Christian (45%) or religious "nones" (i.e., atheist, agnostic, and not affiliated; 44%) with the remaining 11% being some other religion (see Table 1). Participants' degree of religiosity, which has also been associated with a bias against interracial relationships (Yancey, 2007), was determined using a 3-item measure on religiosity (Herman & Campbell, 2012). Items in this scale were answered using 7-point Likert Scales and included "how important is religion to you," "how frequently do you attend religious services," and "how frequently do you pray." Responses were equally weighted then combined into a single religiosity score by summing all the items as suggested by Herman and Campbell (2012). Religiosity scores ranged from 3 to 21 with a mean of 9.96. The mode religiosity score

representing about one fifth of the sample was the lowest possible score of 3 indicating no reported religious activity (n=100, 20%). About half of respondents scored less than 10 in their summed religiosity score (n=249, 48.1%) with the top 25% scoring between 14 and 21 (see Table 2).

Finally, we measured self-reported openness to different types of interracial relationships with items that we modified from a single item developed by Todd et al., (1992). Just as Todd et al. (1992) did, the items each used a 7-point Likert scale for participants to indicate the degree of agreement with the phrases (1) "I would be willing to have a romantic relationship with someone who is not from my own racial or ethnic group" (2) "I would be willing to have a friendship with someone who is not from my own racial or ethnic group" (3) "I would be willing to have one or more sexual encounters with someone who is not from my own racial or ethnic group" (4) "I would be willing to have a dating relationship with someone who is not from my own racial or ethnic group" and (5) "I would be willing to have a long-term committed relationship (such as marriage) with someone who is not from my own racial or ethnic group." Items were equally weighted and combined as a Total Openness score used in analyses. Total scores ranged from the lowest possible score of 5 to 35. Over 50% of participants had scores over 30 and the mode score was 35 with 27% of respondents (n=137) getting the maximum score. Additionally, only 10% of participants had scores lower than 20 (n=53).

Results

We investigated two main research questions: 1. How do race and motivations for matching relate to the selection behavior of SWM using geosocial apps? and 2. Do levels of self-reported openness to interracial relationships or established predictors of racial bias better predict the selection behavior of SWM in geosocial apps? The specific motivations we examined, in

order of escalating commitment, are likelihood of selecting women to pursue a) friendships, b) casual sexual experiences, c) dating relationships, and d) long term relationships such as marriage. We examined these motivations among women of four different racial/ethnic groups (e.g., White, Black, Asian, Hispanic). All analyses were completed using Stata software (StataCorp, 2021) and a copy of our data and the code used for analyses will be made available to the public online at osf.io.

Question 1: How Do Race and Motivations for Using Geosocial Apps Impact the Selection Behavior of SWM?

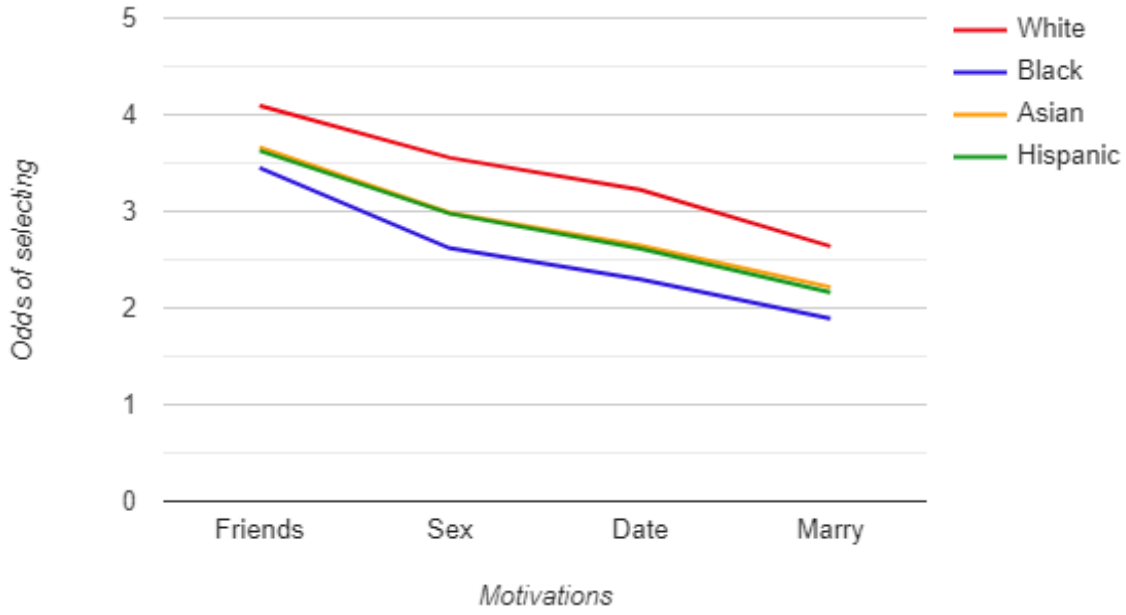
To test hypotheses 1.1 and 1.2, and 1.3 we used a mixed effects logistical regression, which considered race effects, motivation effects, and interaction of raceXmotivation effects on the outcome of the total selections SWM made across all rounds of using the pseudo-geosocial app (Table 3). Before analyzing individual coefficients, we performed post-estimation Wald tests on the direct effects of race and motivation, and the interaction effect of raceXmotivation. Unlike the output from the regression itself which shows coefficients and significance statistics for specific levels of variables, Wald tests are used to show if variables have a significant impact on the accuracy of the model when considering all levels of the variable tested. This is useful because if a Wald test shows that all levels of a variable are not statistically significant, that variable can be dropped from analysis without negatively affecting the accuracy of the model. The Wald tests showed that the general effects of both race and motivation were significant ($\chi2$ (3) = 445.75, p> .0001; $\chi2$ (4) = 906.76, p> .0001) as well as the interaction effect ($\chi2$ (12) = 46.07, p> .0001). After determining that each of the variables in the mixed effects logistic regression warranted inclusion in the model, we examined the specific coefficients at each level of the variables.

Hypothesis 1.1: SWM Will Select Images in a way that Disproportionately Favors White Women Compared to Asian and Hispanic Women and Much More than Black Women When Examining all Motivations for Using Geosocial Apps.

As hypothesized (Hypothesis 1.1), Asian women were 45% less likely to get selected by SWM in the pseudo-geosocial app compared to White women (OR=.545, 95% CI .495-.601, p>.001), Hispanic women were 52% less likely to get selected than White women (OR=.479, 95% CI .434-.528, p>.001), and Black women were 64% less likely than White women to get selected (OR=.357, 95% CI .323-.395, p>.001). Additionally, when the estimated likelihood of being selected was computed for each motivation round, White women always had the highest likelihood of being selected, followed by Asian and Hispanic women, then Black women (see Figure 1). Hypothesis 1.1 was supported by rejecting the null hypotheses that race would have no relationship to selection behavior.

Figure 1

Predicted Odds of Selections by Motivation and Race

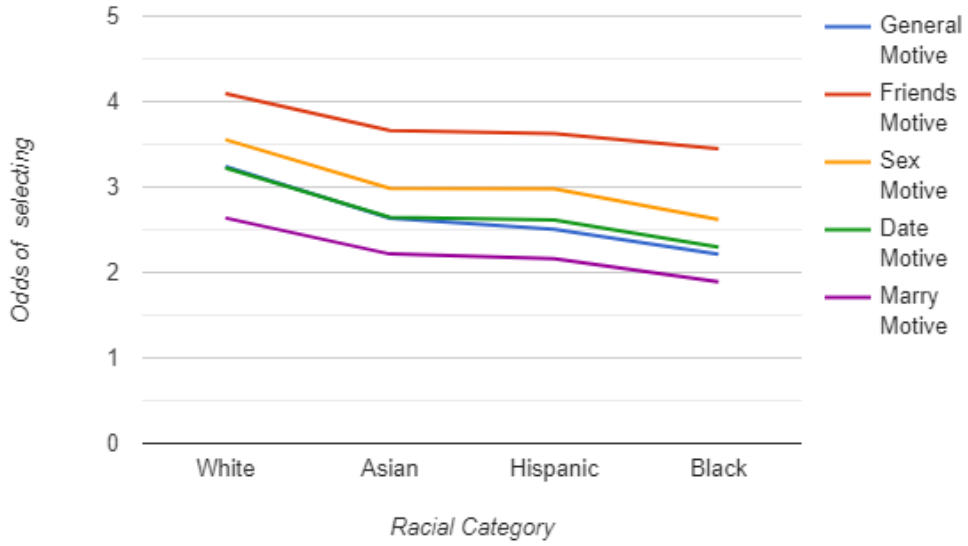


Hypothesis 1.2: SWM Will Select Fewer Profiles as they are Presented with Motivations with Increasing Levels of Commitment (E.G., Many Images will be Selected for Befriending Women, Few for Pursuing Long-Term Relationships/Marriage).

When examining the effect of increasing commitment on selection behavior (Hypothesis 1.2), the effect of the dating prompt was not significant (OR=.983, 95% CI .894-1.081, p=.723). This suggests no difference in how SWM selected images in the general and dating motivation rounds. When comparing the other rounds to the general round, participants, regardless of the race of the image, were 135% more likely to select women to befriend (OR=2.345, 95% CI 2.132-2.581, p>.001), 37% times more likely to select women with whom to pursue a sexual hookup (OR=1.367, 95% CI 1.244-1.503, p>.001), and 45% less likely to select women with whom to pursue a long-term committed relationship, such as marriage (OR=.547, 95% CI .496-.603, p>.001). As predicted, the likelihood of selecting images decreased as levels of commitment increased for each motivation prompt (see Table 3 and Figure 2). Hypothesis 1.2 was supported and we can reject the null hypothesis that motivation would have no relationship to selection behavior.

Figure 2

Predicted Odds of Selections by Race and Motivation



Hypothesis 1.3: The Decline in Selecting Images in Rounds with Motivations with Higher Levels of Commitment will be Steeper for Profiles of Women of Color and Largest for Profiles of Black Women.

Hypothesis 1.3 deals with the interaction effects that were included in the mixed effects logistic regression used to address Hypotheses 1.1 and 1.2. However, to examine the interaction effect, we ran another mixed effects logistic regression which produced four separate regressions—one for each race—by not computing a constant value. This type of analysis was chosen so each interaction effect of all four races could be interpreted and understood more straightforwardly and to produce coefficients which would facilitate testing contrast scores. This regression is summarized in Table 4.

Similar to the direct effect of the dating prompt explored in Hypothesis 1.2, there were no significant interaction effects which included dating at the .01 value (e.g., datingXwhite, datingXblack). Every other interaction had significant associations with selection behavior for all

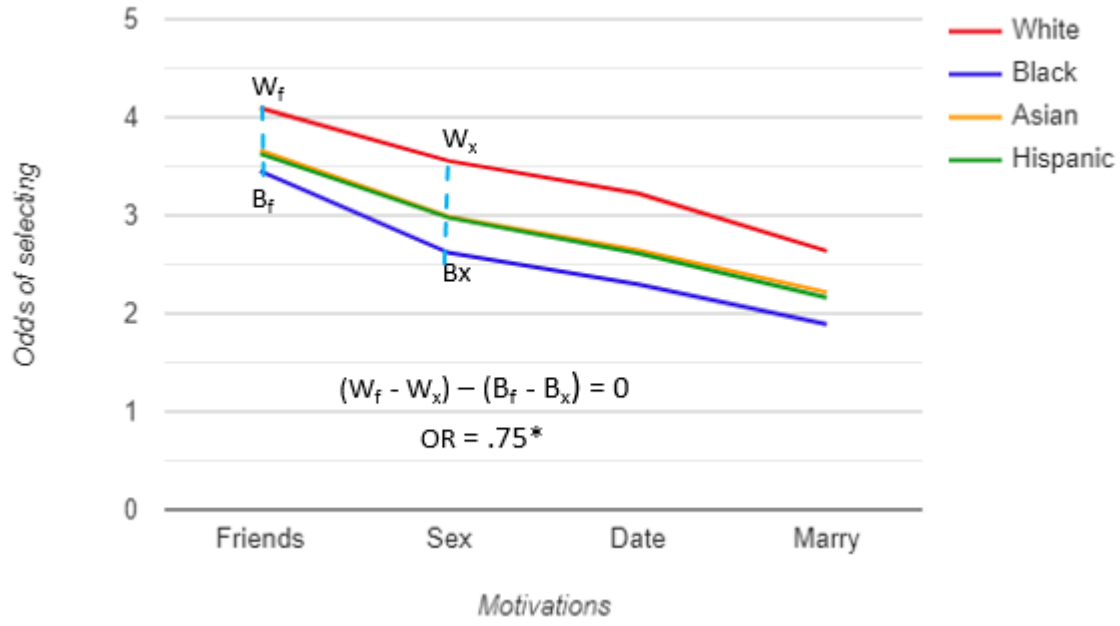
four racial groups (see Table 4). This showed that the including the interaction coefficients provides more precise estimates of selection behavior than using the direct effects of race and motivation alone.

We used the coefficients of the interaction effects to create contrasts between low-commitment motivations and higher commitment motivations for each race (e.g., dateXasian – marryXasian). These contrast scores for women of color were tested against contrast scores for White women using post-estimation analyses of linear combinations of parameters (i.e., "lincom" command in Stata). This analysis directly compares the reduction in the odds of being selected between motivations in one race with the same reduction of another race (e.g., ((dateXasian – marryXasian) - (dateXwhite - marryXwhite) = 0) or ($\Delta_{\text{date-marry}}$Asian - $\Delta_{\text{date-marry}}$White=0)). All but one of the contrast comparisons were not significant at the .01 level (see Table 5), suggesting the reduction in selections of women of color based on motivation was not significantly different compared to white women. Of note, the one significant difference in odds of being selected was between the friends and sex motivations for Black women compared to the same difference for White women (OR=.748, $p< 0.001$, 95% CI .653 - .857). This suggests that the gap between being willing to be friends versus having sex with a Black woman was much larger than the same gap for White women (see Figure 3). When examining the difference in selections between the friendship and marriage rounds, no contrast scores for women of color significantly differed compared to White women (see Table 5) suggesting no significant differences between races in the overall reduction of selections from the lowest-commitment motivation (i.e., friendship) to the highest-commitment motivation (i.e., marriage). Overall, Hypothesis 1.3 was not supported (with the exception of Black women's odds of being selected for sex), and the analyses failed to reject the null hypothesis that there are no additional

decreases in the odds of selecting women of color compared to White women across motivations.

Figure 3

Visualization of Significant Contrast Score Between Black and White Women



Question 2: Do Levels of Self-Reported Openness to Interracial Relationships or Established Predictors of Racial Bias Better Predict the Selection Behavior of SWM in a Pseudo-Geosocial App?

Hypothesis 2.1: The Total Number of Affirmative Selections of Profiles of Women of Color Will Increase for SWM who have the Following Factors: A) Higher Annual Incomes, B) Lower Levels of Religiosity, C) More Education, D) Politically Liberal, and E) Not from the American South.

A mixed effects logistic regression analysis examining race, all hypothesized predictor variables, and an openness to different interracial relationships score was done to test hypotheses

2.1, 2.2, and 2.3 (Table 6). This analysis showed no significant effects of any hypothesized predictor variables (i.e., a) annual income, b) religiosity, c) education, d) political ideology, and e) region of America) on selection behavior on women of different races at the .01 value. This result fails to reject the null hypothesis, and therefore hypothesis 2.1 was not supported. This suggests none of the variables which previous studies found to be associated with racial bias had a significant effect on selection decisions in the pseudo-geosocial app.

Hypothesis 2.2: SWM with High Self-Reported Openness to Interracial Relationships will be More Likely to Select Women of Color in the Pseudo-Geosocial App.

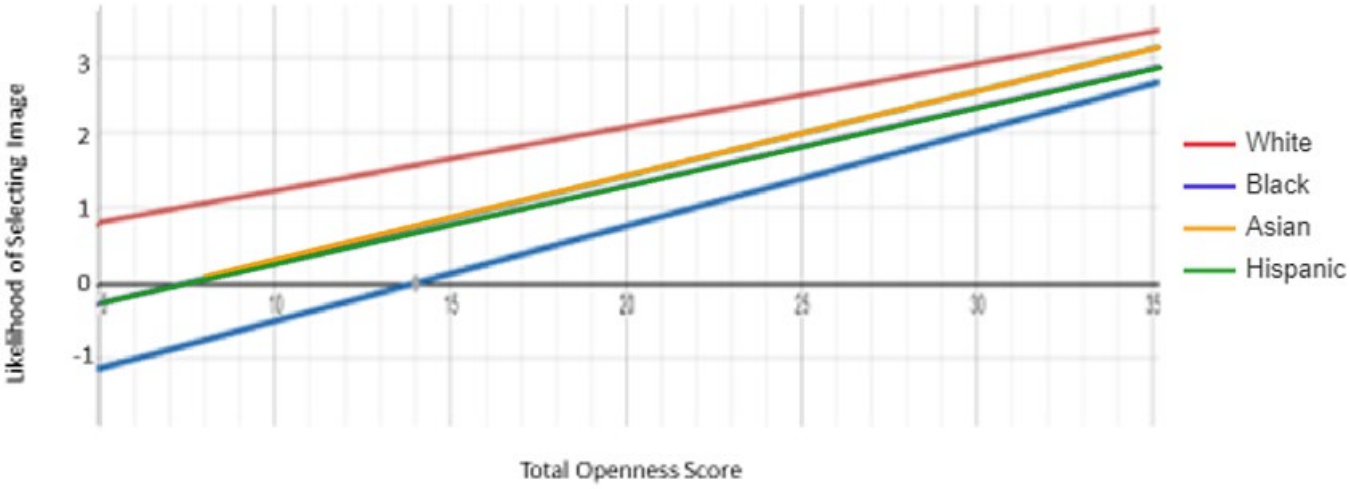
The mixed effects logistic regression showed self-reported openness to interracial relationships had significant effects on selection behavior on women of all four races under consideration (see Table 6 for details). This analysis produced odds ratios that show the likelihood of swiping on women increase with higher openness scores. For each unit of increase in a participant's openness score, images of Asian women were 12% more likely to get selected, Black women were 14% more likely to get selected, Hispanic women were 11% more likely to get selected, and White women were 9% more likely to get selected. Although White women had a slightly lower slope value than other races, they had the highest intercept and therefore had the highest mean values along the entire regression line regardless of openness scores. When examining the intercept and mean values of Black women, they were least likely to get selected compared to all other racial groups at all levels of self-reported openness to interracial relationships. The gap between racial groups' predicted likelihood of being selected narrowed with increased openness scores, but the order of scores remained the same with Black women having the lowest likelihood of being selected, and White women having the highest likelihood

of being selected with Asian and Hispanic women's likelihood of being selected falling between the other two (see Figure 4).

Hypothesis 2.3: When Comparing Self-Reported Openness to Interracial Relationships and Predictors of Racial Bias, The Established Predictors of Racial Bias will be a More Consistent Predictor of Selecting Women of Color than Self-Reported Openness.

Figure 4

Likelihood of Selecting Women of Each Race Based on Openness Scores



The final questions using the mixed effects logistic regression explored whether predictors of racial bias or self-reported openness to various interracial relationships had better predictive power for selecting women of color (Hypothesis 2.3). In addition to that analysis, we conducted a simple linear regression to see how openness was related to the variables assumed to be correlated with racial bias in interpersonal relationships. All predictors were significantly related to openness at the .01 level except for religiosity (see Table 7). The mixed effects logistic regression that accounted for the effects of race, assumed predictors of racial bias, and openness to interracial relationships showed that none of the hypothesized predictors had a statistically

significant association with selection behavior of women of any race. In contrast, openness had a strong association with all four races (see Table 6). While openness scores and the predictor variables were shown to be related in the simple linear regression, the mixed effects linear regression showed no direct relationship between the predictor variables and selection behavior. These results did not support Hypothesis 2.3, and they actually suggest the opposite: self-reported openness to interracial relationships is a better predictor of selection behavior than the hypothesized predictor variables.

Discussion

Geosocial apps are a new tool many young adults use to initiate various types of relationships. This study examined how established racial preferences affect relationship formation function in the 21st century. Previous studies have examined attitudes toward interracial relationships and rates of people partnered with a person of another race (Herman & Campbell, 2012; Todd et al., 1992). However, these studies have not examined how these behaviors and beliefs play out in the increasingly popular practice of meeting on geosocial apps. This is the first study to directly examine the association of race on the decisions made by Straight White Men (SWM) in geosocial apps using profiles of women controlled for age, attractiveness, and other factors.

We found that SWM were significantly less likely to select profiles of women of color compared to profiles of White women when considering friendship, sexual encounters, dating relationships, or long-term committed relationships such as marriage. Although SWM who reported being open to interracial relationships were more likely to select women of color, they were still most likely to choose White women. Additionally, established predictors of negative

attitudes toward interracial relationships (i.e., income, religiosity, political beliefs, geographical region) had no correlation with selection behavior in the app.

Impacts of Race on Partner Selection

Our finding that SWM consistently prefer relationships with White women over Asian and Hispanic women, and much more than Black women, is consistent with previous research (e.g., Herman & Campbell, 2012). This pattern was consistent for friendships, sexual hookups, dating relationships, and long-term committed relationships such as marriage.

In addition to race, research has shown that partner selection is influenced by proximity, exposure, and physical attraction (Festinger et al., 1950; Kao et al., 2019). Some principles of partner selection likely operate differently in geosocial apps due to the way the apps are designed and utilized (David & Cambre, 2016; Aaron, 2017).

Proximity

The people encountered in geosocial apps are within a specific geographical distance from the user when they see their profiles. In addition to physical proximity, mobile technology increases direct digital access to others regardless of actual distance from them (Hall, 2014; Sprecher, 2009; Fox & Warber, 2014). The pseudo-geosocial app used in this study did not provide distance information in profiles, so physical distance was irrelevant to participants' selection decisions. Compared to relationship formation offline in which physical proximity has been shown to increase the likelihood of initiating relationships (Shin et al., 2019), the pseudo-geosocial app in this study controlled for the effects of proximity by omitting any information about the distance of the women in the photos.

Exposure

Although legal segregation of schools and neighborhoods ended in 1964 with the passage of the Civil Rights Act, a large portion of Americans live in largely segregated areas (Rothstein, 2017). While this study could not control the exposure to other races participants had as children or youth, which has been shown to increase the likelihood of partnering with people of other races (see Shibazaki & Brennan, 1998; Emerson et al., 2002), we did expose participants to an equal number of images of women of each race to respond to. This controlled for the number of exposures to different races within the app, which could have otherwise influenced behavior (Zebrowitz et al, 2008; see also Hamm et al., 1975).

Physical Attractiveness

Photos were carefully selected for inclusion in the pseudo-geosocial app based on their physical attractiveness. Physical attraction has been shown to greatly impact the judgments people tend to make about others (see: Webster & Driskell, 1983; Dion et al., 1972; Landy & Sigall 1974; Kwan, 2010). Hence, photos of women in each racial category were selected to have approximately equal attractiveness scores across each racial category based on ratings by a large sample of Americans (Bainbridge et al., 2013). This controlled for potential effects due to unequal mean attractiveness scores of one race over others.

Race

That SWM selected White women at higher rates than women of color in this sample indicates that perceived race was more central than the other factors associated with relationship formation. Interracial relationships in the United States have many unique barriers due to false assumptions and stereotypes about couples who are married interracially (Kenney & Kenney, 2012). Black women were least likely to be selected in the pseudo-geosocial app when compared

to the other three races. This effect could be explained by the fact that interpersonal relationships between Black and White people have experienced more societal hostility than other unions due to racist beliefs about White Supremacy and Black inferiority (DaCosta, 2007; Yancey, 2002; Okun 1996). Our sample's patterns of selection behavior are consistent with what would be expected based on established societal, political, and personal pressures against these particular interracial unions and rates of intermarriage in the United States (Kenney & Kenney 2012).

In addition to societal pressures for same-race partner selection, evolutionary influences on partner selection may also promote same-race partner selection. Although race is a socially constructed identification that does not represent any natural or genotypic differences between races (Smedley & Smedley, 2005), that does not reduce the impact of race on people's decision making processes. To improve survival, humans tend to seek security and protection from potentially dangerous outgroups by finding a partner within one's own racial in-group (see Choi & Tienda, 2017). A person's in-group can foster a sense of safety or security which has also been shown to be reproduced in people's online social networks (Crosier et al., 2012). Another reason that SWM may have evolved a preference for traits more common in White, Asian, and Hispanic women over Black women could be due to the effects of many generations of sexual selection (Lewis, 2012).

Impacts of Relationship Type on Partner Selection

When presented with opportunities for different types of relationships, SWM in our sample selected fewer profiles when relationships involved higher levels of commitment (e.g., marriage). Across all races, profiles with the most to least odds of being selected based on motivations were 1) friends, 2) sexual hookups, 3) dating, and 4) long-term committed relationships such as marriage. The decreased likelihood of selecting women based on

motivations with higher commitment levels was not significantly different between races. In other words, while there were apparent differences between the probability of selecting images based on race, SWM seemed to have similar *patterns* of responding based on motivation prompts regardless of race.

A notable exception arose when comparing the likelihood of selecting profiles with whom to befriend or initiate sex. The rate of selecting Black women for sex decreased significantly more compared to White women. This suggests that SWM may prioritize being friends with Black women, or would avoid having a hookup with Black women, or both when compared to White women. The finding that SWM are significantly less likely to initiate sex with Black women may be at least partially driven by harmful stereotypes commonly held by SWM. Specifically, beliefs that Black women are less physically attractive, and more sexually promiscuous than other women (see Weitz & Gordon, 1993; Bany et al., 2014; Flores, 2020) could have driven down the rate of selecting Black women for a sexual encounter. At the same time, these stereotypes may not have the same dampening effect on befriending Black women.

Participants in the present study were most liberal with their selection behaviors when presented with the opportunity to befriend women. Unlike pursuing sexual, dating, or marriage partners, selecting a woman to befriend appears to have relatively low stakes. When considering befriending women of other races, research has shown that White university students were less likely than their peers of other races to have interracial friendships especially if they did not have them before entering college (Kim et al., 2015). Additionally, White people are more likely to live in majority White areas and attend majority White K-12 schools, limiting the number of people of color they could befriend (see Rothstein, 2017). So, SWM in this sample had the highest likelihood of selecting women to befriend compared to other motivations, and their

selection patterns followed similar racial trends as established in the literature. Namely, SWM were most likely to befriend White women followed by Asian and Hispanic women, then Black women.

The motivation with the next highest odds of being selected by SWM was to have a sexual hookup. The same ordering of likelihood based on race existed in this motivation. Other researchers have described how particular romantic or sexual perceptions of women in racial outgroups can be harmful to women of color due to racial fetishization and over-sexualization based on inaccurate racial stereotypes (see Holmes, 2016; Zheng, 2016). If this phenomenon had a significant impact on SWM's selection behavior in the pseudo-geosocial app, it would most likely result in a disproportionately higher likelihood of selecting women of color compared to White women. While fetishization has been found among a certain portion of SWM, the current study did not identify increased odds of selecting women of any particular race for pursuing sexual relationships as one might expect. Indeed, the only significant difference found was that profiles of Black women had a greater drop off than White women between being selected to befriend or to have sex. This finding may support the idea that SWM wrongfully dehumanize or seek to avoid Black women for physical intimacy, but it does not follow a pattern of behavior that would be expected to occur due to fetishization. Although our study did not directly address racial fetishization, the data showed no evidence for increased likelihood for pursuing women of color for sex compared to White women.

Although many geosocial apps have a reputation for being "hookup apps" (Aaron, 2017), when SWM were asked to use the app in the study "just as you would other geosocial apps" their responses were most similar to when they were instructed to make selections based on pursuing a dating relationship. This result calls into question the assumption that most people use geosocial

apps for hookups since this sample of geosocial app users seemed to seek dating relationships as their default mode of responding.

The patterns of SWM selecting women with whom to pursue a long-term relationship matched what one might expect. Namely, people tend to be more judicious about choices involving high levels of commitment such as marriage. Other factors that could help explain the lowest likelihood of SWM selecting women for long-term committed relationships is the young age of our participants (median age: 27) and an increasing age of first marriage for men in America (age: 29.9; Payne, 2019). It is possible many participants are not actively considering marriage at this point in their lives and were thus less likely to swipe on women for that purpose. Additional analyses including specific ages were considered but omitted due to a restricted range of ages represented in the sample and to reduce the risk of Type 1 error. Future research may consider looking at different age cohorts or include analyses which consider ages of samples with larger ranges than the current study used.

When considering race, this sample of SWM selected about 24% of women of color with whom to potentially pursue long-term relationships such as marriage. This is more than double the estimates of actual new interracial marriages for White men in the United States (11%; See Livingston & Brown, 2017). One explanation for such a wide discrepancy between the rates of selecting women of color for potential long-term partners and actual intermariage rates is the low-stake nature of simply selecting potential partners in an app. Indeed, people often use geosocial apps without a specific intent to develop a relationship at all (Aaron, 2017). Additional considerations of how geosocial apps may impact decisions to select women with whom to initiate interpersonal relationships are discussed below.

One last extraordinary factor which could have impacted participants' selection behavior in this study is the presence of the highly contagious virus, COVID-19, which impacted the whole world during the time of data collection. Data were collected in the late spring and early summer of 2021. At that time there were various stages of lockdowns, mask mandates, and limited hours or closures of many public services and private companies across the United States. When examining the effects of the virus and the associated responses of governments, businesses, and individuals in 2020, researchers found significant impacts on interpersonal relationships. Wagner, Choi, and Cohen (2020) found that recorded marriages had decreased by between 15-44% depending on which states were being studied. Practical safety behaviors such as social distancing or quarantining may have also prevented many people from seeking out new friendships, hookups, or other relationships during this period.

The health and mortality impacts of COVID-19 on the specific population under investigation in this study may have had unique influences on their attitudes and safety behaviors during the time of data collection. White people were less likely to contract COVID-19 than people of color - largely due to making up a smaller share of essential workers during the pandemic - (see Rogers et al., 2020). Additionally, the rise in deaths in the United States was much lower for White people (12% rise in 2020 compared to averages during 2015-2019) than for other races in the same time frame (54% rise for Hispanic people, 33% for Black people, and 37% for Asian people; Rossen et al., 2020). SWM in the sample were also younger (i.e., 18-34) than those with the highest risk of infection and death due to COVID-19 (see Rossen et al., 2020). When exploring online attitudes toward mandated mask wearing to prevent transmission of COVID-19, researchers identified several hashtags which specifically targeted men to askew the mandates (Lang et al., 2021). While the researchers did not investigate the gender of those

sharing the hashtag, they recommend further research to identify differences in safety precautions by gender.

These factors likely influenced SWM's attitudes and behaviors of initiating new relationships in person, online, and in the study. Due to the ongoing presence of COVID-19, ever changing policies, mandates, recommended health behaviors, and troubling new variants of the virus which continue to emerge, it is difficult to estimate how large or small the impact of COVID-19 had on the selection behavior of SWM in this study. No data was collected which directly assessed how COVID-19 may have influenced SWM to select more or fewer women in the pseudo-geosocial app. However, it is important to recognize the unprecedented context for those who participated in the study. The study results can be reexamined as relevant research about this extraordinary time period becomes available.

Explicit Attitudes Toward Interracial Relationships are Better Predictors of Behavior than Assumed Demographic Influences

One of our research questions involved evaluating the predictive utility on selection decisions in a pseudo-geosocial app of both self-reported openness to interracial relationships and established predictors of aversion to interracial relationships (e.g., politically conservative, highly religious). Self-reported openness to interracial relationships was significantly correlated with increased odds of selecting women of all races on the pseudo-geosocial app, but none of the established predictors of aversion to interracial relationships were significantly correlated to selection decisions. The specific predictor variables which did not correlate with selection decisions in this study included religiosity, political leanings, annual income, education, and being from the American South.

Openness to Interracial Relationships

Participants in this sample had high levels of self-reported openness to interracial relationships, with 84% of the sample indicating they are more open than not to be involved in interracial relationships and 27% of the sample indicating the maximum possible openness to interracial relationships. These high scores could be partially accounted for because people feel pressure to respond in a particular way to items about racial attitudes in surveys (Holmes, 2014). However, SWM were indeed more likely to select women of color when they reported higher openness to interracial relationships. The agreement between self-reported openness and odds of selecting women of color suggests SWM have some insight into their beliefs, attitudes, and behaviors toward women of color.

In addition to being more likely to select women of color, SWM who reported high openness were also more likely to select White women in the app. This could indicate that the items about being open to interracial relationships may also capture a more general tendency to initiate relationships with women of all races under investigation. White women are the most likely to be selected by SWM at all levels of openness including by participants with the highest openness scores. For SWM who value being open to interracial relationships or who are concerned about equality, this finding may help them be more aware of the common tendency to reject women of color at higher rates than White women. This awareness could assist SWM to consider how they might practice anti-racism in their geosocial app use. This would benefit SWM by affording them increased opportunities to interact with women of more diverse racial backgrounds.

Assumed Predictor Variables

Previous research has shown that those with high levels of religiosity were more likely than those with low levels of religiosity to disapprove of interracial relationships (Yancey, 2007), but these findings have been inconsistent. White people who attend services with diverse congregations and have less literal interpretations of the bible may have significantly higher levels of support for interracial relationships (Perry, 2013). Variability in the types of congregations SWM worship with or different interpretations of scripture could impact the attitudes toward interracial relationships and thus selection behaviors in divergent ways for SWM with similar levels of religiosity.

A slim plurality of participants identified as Christian (45%), and the next largest portion of this sample identified as religious "nones" (i.e. atheist, agnostic, and no affiliation; 44%). While participants in the present study represented a full range of religiosity, a fifth of participants denied holding any importance in religion and no engagement in religious practices at all. Religious "nones" are a growing sector of the population due to many people leaving traditional religions (see Lipka, 2015). This phenomenon has been fueled by disagreement with things such as religious teachings and churches' positions on political issues (Alper, 2018). While religious "nones" are increasing among all demographic groups in America, White people, men, and more educated people tend to make up a majority of atheists and agnostics (Lipka, 2015). Perhaps because participants were exclusively White men, the rates of religious "nones" were higher in this sample than estimates of religious "nones" in the general population. Despite the interesting rates of religious identification in the sample, religiosity had no correlation to SWM's selection behavior in the pseudo-geosocial app.

Research has shown those who identify as politically conservative are less likely to date or marry interracially (Eastwick et al., 2009). However, party affiliation and political identification could have been impacted for many participants due to an attack by Right-wing extremists on the United States Capitol on January 6, 2021, just months before this study was conducted. Researchers found that active Twitter users removed indicators of support for Donald Trump and the Republican party after insurrectionists marched on the Capitol building in an attempt to overturn the results of the 2020 election to keep former-President Donald Trump in office (Eady et al., 2021). About 45% of participants in the current study self-identified as moderates, but that figure may include an unknown portion of SWM whose political views and self-identification may still be in flux after January 6, 2021. While changing one's public self-identification as conservative or Republican can occur in a moment, attitudes and behaviors associated with one's political views likely take longer to change. These factors cloud the interpretation of the fact that political leanings as measured in this study did not have a significant association with SWM's selection behavior in the pseudo-geosocial app.

SWM's selection decisions had no significant associations with religiosity, political leanings, annual income, education, or being from the American South. There are a few factors specific to this pseudo-geosocial app that could help explain why these variables did not predict selection behavior as expected.

The Laws of Attraction

Potential explanations for why established predictor variables were not associated with SWM's selection behavior may be informed by studies on the impact of physical attractiveness on partner selection. Research exploring select-or-reject behavior utilizing speed dating has found that race of potential partners and variables predicting same-race preferences had smaller

effects on decision making than the physical attractiveness of the person with whom they interacted (Fisman et al., 2008). In other words, if a potential partner is physically attractive, the impact of other variables seems to fade to the background.

Research examining the effect of attractiveness online which used a simulated dating site showed that profiles of more attractive people had greater likeability scores from participants (Peters & Salzsieder, 2018). The current study selected images of women that were rated of approximately equal attractiveness between races, but all the faces of women selected for use in the pseudo-geosocial app were rated as being above average in attractiveness. Since all women in the study were attractive, SWM's odds of selecting women of all races may be inflated when compared to real geosocial apps which have people with greater variability in attractiveness. Future studies could directly examine selection behaviors based on the attractiveness and race in a pseudo-geosocial app to more fully understand how this type of phenomenon manifests in geosocial apps.

A Right Swipe is Not a Promise

Studying geosocial app behavior differs from studies that examine engagement in actual interracial relationships due to the low stakes, binary nature of the select-or reject decision. Additionally, scrolling through profiles of potential partners in a geosocial app does removes pressures and feedback involved in directly interacting with another person. Due to the fast-paced nature of geosocial apps (Aaron, 2017) and the Online Disinhibition Effect, SWM likely behaved differently in their responses than they would have in face-to-face interactions with potential partners (Suler, 2005). The relative anonymity afforded to users, the relatively low stakes, and the removal of pressure to immediately respond to others afforded to users by geosocial apps could have the effect of lowering people's inhibitions, reducing the influence of

social norms and expectations, and lead SWM to make selections without considering external consequences or social norms.

Analyses of data from real dating sites have shown that straight men tend to select more potential partners than women do and may even select profiles of women indiscriminately in a way that treats finding partners to meet offline as a "numbers game" rather than a meaningful first step in relationship formation (Zhang & Yasseri, 2016; Whitty, & Carr, 2006). SWM's select-or-reject decisions in a geosocial app are not likely to directly translate to behaviors at different points in the relationship formation process, including further steps directly supported by geosocial apps such as messaging other users, exchanging phone numbers, or planning to meet offline. It may be that additional social barriers or personal biases manifest after the select-or-reject process and when elements of the Online Disinhibition Effect begin to diminish. For example, SWM's behaviors toward women would likely change as interactions with them start to resemble offline interactions through shorter delays in communication and decreases in relative anonymity that come with activities like talking on the phone or meeting offline.

Future research could explore the decisions SWM make to continue or discontinue the relationship formation process with women of color (e.g., chatting online, initiating dating) and how that process might differ with White women. This could help begin to explain the significant differences in the selection of women of color for potential marriage partners in this study (about 24%) and the actual rate of interracial marriages involving SWM (about 11% of marriages; Livingston & Brown, 2017). The established predictors of negative attitudes toward interracial relationships could also be included in these studies to see if, and at what point, they begin to correlate with discontinuing the relationship formation process with women of color.

Limitations and Future Directions

The most important limitation to account for in this study is the narrow target demographic that it was investigating. This study was intended to examine the selection behaviors of single, emerging adult, straight, cis-gender, White men from the United States of America. This was done to explore how those who belong to the demographic with the most privilege and social and institutional power in the United States behave in the context of relationship formation in geosocial apps. Drawing conclusions from this demographic to other populations is not advisable. However, future research could investigate the geosocial app decisions of other populations. Researchers may consider using the same methods but target other populations by varying aspects of sexual orientation, race, gender, or other demographics.

Other important aspects of this design which should not be discounted involve unique qualities of the pseudo-geosocial app used to collect data. The profiles of women in the pseudo-geosocial app omitted everything except for a single image of a woman's face. This was done to control for as many variables as possible and isolate race and motivations for analysis. The photos used in the study were intentionally chosen to have neutral hairstyles, no visible tattoos, no visible piercings other than a single pair of earrings, and to exclude background imagery. There was also no other information about the women such as names or ages. This differs from profiles on real geosocial apps that can include multiple photos and written information to show a greater view of their physical appearance, express more about their personality, and communicate using written information about themselves to attract other users. App users often choose to include information about themselves such as their name, age, location, and personalized descriptions, including information about career, education, hobbies, interests, and even mutual friends. All of these variables and others could be topics for future studies to

investigate what aspects of a user's profile either increase or decrease the number of people who select that profile.

Another factor that could be addressed in future research is the limited presentation of race in the images included in this study. SWM in the study responded to women from only four discrete racial categories: Asian, Black, Hispanic, and White. This is an artificial division since approximately 7% of adults in the United States could be considered multiracial (Parker et al., 2015). Images in the study did not include cues to racialization such as evidence of traditional hairdos or dress, and they only represented a partial range of variability within the races included. Future research could include more races or account for variations within each of the races under investigation. Different features within each race such as hairstyle and color, eye color, tattoos, piercings, variable levels of attractiveness, or other features could be examined. Skin tone might also be studied since research has shown negative impacts of colorism (discrimination which prefers lighter skin tones) within a single race (see Tsunokai et al., 2019; Martinez, 2021).

Additionally, two racial categories in the present study represented a narrow range of all members who could belong to their racial groups. The Asian category in this study only included East Asian women and excluded South Asians (e.g., people whose ancestry traces back to India, Pakistan, Nepal, etc.). The Hispanic category did not account for the wide variability within this population which can blur discrete distinctions between races such as people who identify as White and Hispanic, Afro-Latina, or other racial and ethnic labels. Expanding the scope of investigation would help expose additional patterns in the way SWM select or reject women in geosocial apps.

Conclusion

While there are many more questions about how myriad factors impact geosocial app decision making, this study represents a significant step forward in understanding how race impacts relationship formation decisions for SWM in geosocial apps. This study provides data that agrees with the reported experiences of many women of color who have interacted with or been rejected by SWM in geosocial apps due to their race. These findings may also help SWM be more aware of the common tendency to reject women of color in favor of White women. Over time, this awareness may lead to behavioral change in SWM if they reflect on and challenge potential biases they may hold against developing relationships with women of other races.

References

Aaron, S.C. (2017). Investigating motivations for using dating websites and geosocial apps (Master's thesis). Retrieved from https://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=7840&context=etd

Alhabash, S., Hales, K., Baek, J. H., & Oh, H. J. (2014). Effects of race, visual anonymity, and social category salience on online dating outcomes. *Computers in Human Behavior*, *35*, 22-32.

Alper, B. A. (2018). Why America's 'nones' don't identify with a religion. *Pew Research Center.*

Azoulay, K. G., & Mevorach, K. G. (1997). *Black, Jewish, and interracial: It's not the color of your skin, but the race of your kin, and other myths of identity.* Duke University Press.

Bainbridge, W., Isola, P., Blank, I., & Oliva, A. (2012). Establishing a database for studying human face photograph memory. *Proceedings of the Annual Meeting of the Cognitive Science Society, 34*(34).

Bainbridge, W.A., Isola, P., & Oliva, A. (2013). The intrinsic memorability of face images. *Journal of Experimental Psychology: General, 142*(4), 1323-1334.

Bany, J. A., Robnett, B., & Feliciano, C. (2014). Gendered black exclusion: The persistence of racial stereotypes among daters. *Race and Social Problems, 6*(3), 201-213.

Bogle, K. A. (2008). *Hooking up: Sex, dating, and relationships on campus.* NYU Press.

Bonilla-Silva, E. (2013). "New racism," color-blind racism, and the future of Whiteness in America. *White Out* (pp. 268-281). Routledge.

Braithwaite, S. R., Aaron, S. C., Dowdle, K. K., Spjut, K., & Fincham, F. D. (2015). Does pornography consumption increase participation in friends with benefits relationships? *Sexuality & Culture*, *19*(3), 513-532. http://doi.org/10.1007/s12119-015-9275-4

Braithwaite S, Givens A, Brown J, Fincham F. (2015). Is pornography consumption associated with condom use and intoxication during hookups? *Culture, Health & Sexuality, 17*(10) 1155-1173. http://doi.org/10.1080/13691058.2015.1042920

Bratter, J. L., & King, R. B. (2008). "But will it last?": Marital instability among interracial and same-race couples. *Family Relations*, *57*(2), 160-171.

Brownridge, D. A. (2016). Intimate partner violence in interracial relationships. *Journal of Family Violence*, *31*(7), 865-875.

Bump, P. (2018, November 21). Nine out of 10 incoming Republican House members are white men. *The Washington Post.* Retrieved from https://www.washingtonpost.com/politics/2018/11/21/nine-out-ten-incoming-republican-house-members-are-white-men/

Buss, D. M. (2009). The great struggles of life: Darwin and the emergence of evolutionary psychology. *American Psychologist, 64*(2), 140.

Chen, G. A., & Buell, J. Y. (2018). Of models and myths: Asian (Americans) in STEM and the neoliberal racial project. *Race Ethnicity and Education, 21*(5), 607-625.

Choi, K. H., & Tienda, M. (2017). Marriage-market constraints and mate-selection behavior: Racial, ethnic, and gender differences in intermarriage. *Journal of Marriage and Family, 79*(2), 301-317.

Cohen-Almagor, R. (2018). Taking North American White supremacist groups seriously: the scope and the challenge of hate speech on the internet. *International Journal for Crime, Justice and Social Democracy, 7*(2), 38-57.

Colby, S. L., & Ortman, J. M. (2017). Projections of the size and composition of the US population: 2014 to 2060. *Population Estimates and Projections,* 25-1143. US Census Bureau.

Cornwell, B., & Lundgren, D. C. (2001). Love on the Internet: Involvement and misrepresentation in romantic relationships in cyberspace vs. realspace. *Computers in Human Behavior, 17*(2), 197-211.

Corriero, E. F., & Tong, S. T. (2016). Managing uncertainty in mobile dating applications: Goals, concerns of use, and information seeking in Grindr. *Mobile Media & Communication, 4*(1), 121-141. http://doi.org/10.1177/2050157915614872

Crosier, B. S., Webster, G. D., & Dillon, H. M. (2012). Wired to connect: Evolutionary psychology and social networks. *Review of General Psychology, 16*(2), 230-239.

DaCosta, K. M. (2007). *Making multiracials: State, family, and market in the redrawing of the color line.* Stanford University Press.

David, G., & Cambre, C. (2016). Screened intimacies: Tinder and the swipe logic. *Social Media Society,2*(2). http://doi.org/10.1177/2056305116641976

Dawkins, J. (2004). Recent evidence on the continuing causes of Black-White residential segregation. *Journal of Urban Affairs. 26*(3): 379-400. http://doi.org/10.1111/j.0735-2166.2004.00205.x

DiAngelo, R. (2011). White fragility. *The International Journal of Critical Pedagogy, 3*(3), 54-70.

Dion, K., Bercheid, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology, 24*(3), 385-390.

Doherty, C., Kiley, J., & O'Hea, O. (2018). Wide gender gap, growing educational divide in voters' party identification. *Pew Research Center*.

Eady, G., Hjorth, F., & Dinesen, P. T. (2021). Do violent protests affect expressions of party identity? Evidence from the capitol insurrection. https://osf.io/h5vsu/

Eastwick, P. W., & Finkel, E. J. (2008). Sex differences in mate preferences revisited: Do people know what they initially desire in a romantic partner? *Journal of Personality and Social Psychology*, *94*(2), 245.

Eastwick, P. W., Richeson, J. A., Son, D., & Finkel, E. J. (2009). Is love colorblind? Political orientation and interracial romantic desire. *Personality and Social Psychology Bulletin*, *35*(9), 1258-1268.

Emerson, M.O. Kimbro, R.T. & Yancey, G. (2002). Contact theory extended: The effects of prior racial contact on current social ties. *Social Science Quarterly, 83,* 745-761

Feingold, A. (1990). Gender differences in effects of physical attractiveness on romantic attraction: A comparison across five research paradigms. *Journal of Personality and Social Psychology, 59*(5), 981-993. http://doi.org/10.1037/0022-3514.59.5.981

Feliciano, C., Robnett, B. & Komaie, G. (2009). Gendered racial exclusion among White internet daters. *Social Science Research, 38*, 39-54.

Festinger, L., Schachter, S., & Back, K. (1950). *Social pressures in informal groups; a study of human factors in housing*. Stanford University Press.

Finkel, E. J., Eastwick, P. W., Karney, B. R., Reis, H. T., & Sprecher, S. (2012). Online dating: A critical analysis from the perspective of psychological science. *Psychological Science in the Public Interest, 13*(1), 3-66.

Fisman, R., Iyengar, S. S., Kamenica, E., & Simonson, I. (2008). Racial preferences in dating. *The Review of Economic Studies*, *75*(1), 117-132.

Flores, R. D. (2020). "A little more ghetto, a little less cultured": Are there racial stereotypes about interracial daters in the United States? *Sociology of Race and Ethnicity, 6*(2), 269-286.

Fox, J., & Warber, K. M. (2014). Social networking sites in romantic relationships: Attachment, uncertainty, and partner surveillance on Facebook. *Cyberpsychology, Behavior, and Social Networking, 17*(1), 3-7.

Frank, S., Santurri, L., & Knight, K. (2010). *Hyper-texting and hyper-networking: A new health risk category for teens?* 138th Annual Conference of the American Public Health Association 2010. Denver, Colorado.

Frankenberg, E., & Orfield, G. (Eds.). (2007). *Lessons in integration: Realizing the promise of racial diversity in American schools.* University of Virginia Press.

Fu, X. (2006). Impact of socioeconomic status on inter-racial mate selection and divorce. *The Social Science Journal, 43*(2), 239-258.

Glover, R. J. (1994). Using moral and epistemological reasoning as predictors of prejudice. *The Journal of Social Psychology, 134*(5), 633-640.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, *74*(6), 1464.

Grossman, L. (2016). Anxiety in the guise of racism. *New Scientist, 230*(3078), 40-41.

Halford, J. T., & Hsu, S. H. (2014). Beauty is wealth: CEO appearance and shareholder value. Available at SSRN: https://ssrn.com/abstract=2357756 or http://dx.doi.org/10.2139/ssrn.2357756

Hall, J. A. (2014). First comes social networking, then comes marriage? Characteristics of Americans married 2005-2012 who met through social networking sites. *Cyberpsychology, Behavior, and Social Networking, 17*(5), 322-326.

Hall, P. (2000). The Bible prohibits interracial marriage. *Interracial Relationships*, 34-38.

Hamm, N. H., Baum, M. R., & Nikels, K. W. (1975). Effects of race and exposure on judgments of interpersonal favorability. *Journal of Experimental Social Psychology, 11*(1), 14-24.

Hampton, K. N., Sessions, L. F., & Her, E. J. (2011). Core networks, social isolation, and new media: How Internet and mobile phone use is related to network size and diversity. *Information, Communication & Society, 14*(1), 130-155.

Hardey, M. (2002). Life beyond the screen: Embodiment and identity through the internet. *The Sociological Review*, *50*(4). http://doi.org/10.1111/1467-954X.00399

Harris, K.M., Halpern, C.T., Whitsel, E., Hussey, J., Tabor, J., Entzel, P., & Udry, J.R., 2009. *The National Longitudinal Study of Adolescent to Adult Health: Research Design* [WWW document]. https://addhealth.cpc.unc.edu//documentation/study-design

Herman, M. R., & Campbell, M. E. (2012). I wouldn't, but you can: Attitudes toward interracial relationships. *Social Science Research, 41*(2), 343-358.

Holmes, C. M. (2016). The colonial roots of the racial fetishization of Black women. *Black & Gold, 2*(1), 2.

Hooghe, M., & Dassonneville, R. (2018). Explaining the Trump vote: The effect of racist resentment and anti-immigrant sentiments. *PS: Political Science & Politics, 51*(3), 528-534.

Joyner, K., & Kao, G. (2005). Interracial relationships and the transition to adulthood. *American Sociological Review, 70*(4), 563-581.

Kao, G., Joyner, K., & Balistreri, K. S. (2019). *The company we keep: Interracial friendships and romantic relationships from adolescence to adulthood.* Russell Sage Foundation.

Karlsen, R., Steen-Johnsen, K., Wollebæk, D., & Enjolras, B. (2017). Echo chamber and trench warfare dynamics in online debates. *European Journal of Communication, 32*(3), 257-273.

Kendi, I. (2017). *Stamped from the beginning: The definitive history of racist ideas in America.* Random House.

Kenney, K. E., & Kenney, M. E., (2012). Contemporary US multiple heritage couples, individuals, and families: Issues, concerns, and counseling implications. *Counseling Psychology Quarterly*, *25*, 99-112.

Kim, Y. K., Park, J. J., & Koo, K. K. (2015). Testing self-segregation: Multiple-group structural modeling of college students' interracial friendship by race. *Research in Higher Education, 56*(1), 57-77.

King, R. B., & Bratter, J. L. (2007). A path toward interracial marriage: Women's first partners and husbands across racial lines. *The Sociological Quarterly*, *48*(2), 343-369.

Kirkpatrick, L.A. (1993). Fundamentalism, Christian orthodoxy, and intrinsic religious orientation as predictors of discriminatory attitudes. *Journal for the Scientific Study of Religion, 32,* 256-268.

Knuckey, J., & Kim, M. (2015). Racial resentment, old-fashioned racism, and the vote choice of Southern and Nonsouthern Whites in the 2012 US presidential election. *Social Science Quarterly, 96*(4), 905-922.

Kruse, H., Smith, S., van Tubergen, F., & Maas, I. (2016). From neighbors to school friends? How adolescents' place of residence relates to same-ethnic school friendships. *Social Networks, 44*, 130-142.

Kwan, S. (2010). Navigating public spaces: Gender, race, and body privilege in everyday life. *Feminist Formations*, *22*(2), 144-166.

Landy, D., & Sigall, H. (1974). Beauty is talent: Task evaluation as a function of the performer's physical attractiveness. Journal of Personality and Social Psychology, 39(3), 299-304.

Lang, J., Erickson, W. W., & Jing-Schmidt, Z. (2021). # MaskOn!# MaskOff! Digital polarization of mask-wearing in the United States during COVID-19. *PloS One, 16*(4), e0250817.

LeFebvre, L. E. (2018). Swiping me off my feet: Explicating relationship initiation on Tinder. *Journal of Social and Personal Relationships, 35*(9), 1205-1229.

Lewis, K. (2013). The limits of racial prejudice. *Proceedings of the National Academy of Sciences, 110*(47), 18814-18819.

Lewis, M. B. (2012). A facial attractiveness account of gender asymmetries in interracial marriage. *PLoS One, 7*(2), e31703.

Lipka, M. (2015). A closer look at America's rapidly growing religious "nones." *Pew Research Center, 13*.

Litman, L., Robinson, J., & Abberbock, T. (2017). TurkPrime.com: A versatile crowdsourcing data acquisition platform for the behavioral sciences. *Behavior Research Methods, 49*(2), 433-442.

Livingston, G., & Brown, A. (2017). Intermarriage in the US 50 years after Loving v. Virginia. *Report, Pew Research Center, May*, *18*.

Lopez, M. H., Passel, J., & Rohal, M. (2015). Modern immigration wave brings 59 Million to US, driving population growth and change through 2065. Washington, DC: *Pew Research Center.*

Lye, D. N., & Waldron, I. (1997). Attitudes toward cohabitation, family, and gender roles: Relationships to values and political ideology. *Sociological Perspectives, 40*, 199–225.

Madden, M., & Lenhart, A. (2006). *Online dating*. Retrieved <http://pewinternet.org/Reports/2006/Online-Dating.aspx>.

Martinez, Y. M. (2021). Assessing Latinx colorism and skin tone dating preferences in adults. *Ursidae: The Undergraduate Research Journal at the University of Northern Colorado*, *10*(1), 1.

McConahay, J. B., Hardee, B. B., & Batts, V. (1981). Has racism declined in America? It depends on who is asking and what is asked. *Journal of Conflict Resolution*, *25*(4), 563-579.

Michael, G. (2017). The rise of the alt-right and the politics of polarization in America. *Skeptic* (Altadena, CA), *22*(2), 9-18.

Miller, B. (2015). 'They're the modern-day gay bar': Exploring the uses and gratifications of social networks for men who have sex with men. *Computers In Human Behavior, 51*(Pt A), 476-482. http://doi.org/10.1016/j.chb.2015.05.023

Miller, B. (2017). What are the odds: An examination of adolescent interracial romance and risk for depression. *Youth & Society*, *49*(2), 180-202.

Miller, S. C., Olson, M. A., & Fazio, R. H. (2004). Perceived reactions to interracial romantic relationships: When race is used as a cue to status. *Group Processes & Intergroup Relations, 7*(4), 354-369.

Muthén, L. K., & Muthén, B. O. (2002). How to use a Monte Carlo study to decide on sample size and determine power. *Structural Equation Modeling, 9*(4), 599-620.

Negy, C., & Snyder, D. K. (2000). Relationship satisfaction of Mexican American and nonHispanic White American interracial couples: Issues of acculturation and clinical intervention. *Journal of Marital and Family Therapy, 26*, 293-304.

Okun, B.F. (1996). *Understanding diverse families: What practitioners need to know.* New York: The Guilford Press.

Olderbak, S. G., Malter, F., Wolf, P. S. A., Jones, D. N., & Figueredo, A. J. (2017). Predicting romantic interest at zero acquaintance: Evidence of sex differences in trait perception but not in predictors of interest. *European Journal of Personality, 31*(1), 42-62.

Olivola, C. Y., Sussman, A. B., Tsetsos, K., Kang, O. E., & Todorov, A. (2012). Republicans prefer Republican-looking leaders: Political facial stereotypes predict candidate electoral success among right-leaning voters. *Social Psychological and Personality Science, 3*(5), 605-613.

O'Sullivan, L. F. (2015). High texting rates mediate oral sex and intercourse experience in a longitudinal study of high school students. *Computers in Human Behavior*, *49*, 526-531.

Owen, J., & Fincham, F. D. (2011). Effects of gender and psychosocial factors on "friends with benefits" relationships among young adults. *Archives of Sexual Behavior*, *40*(2), 311-320.

Parker, K., Horowitz, J. M., Morin, R., & Lopez, M. H. (2015). Multiracial in America: Proud, diverse and growing in numbers. *Pew Research Center. Retrieved July, 21, 2020*.

Passel, J. S., Wang, W., & Taylor, P. (2010). One-in-seven new US marriages is interracial or interethnic. *Pew Social & Demographic Trends*.

Payne, K. K. (2019). Median age at first marriage: Geographic variation, 2017. *National Center for Family & Marriage Research @ Bowling Green State University.*

Pawlowski, B., & Jasienska, G. (2005). Women's preferences for sexual dimorphism in height depend on menstrual cycle phase and expected duration of relationship. *Biological Psychology, 70*(1), 38-43.

Penton-Voak, I. S., Perrett, D. I., & Peirce, J. W. (1999). Computer graphic studies of the role of facial similarity in judgements of attractiveness. *Current Psychology*, *18*(1), 104-117.

Perry, S. L. (2013). Religion and Whites' attitudes toward interracial marriage with African Americans, Asians, and Latinos. *Journal for the Scientific Study of Religion, 52*(2), 425-442.

Peters, S., & Salzsieder, H. (2018). What makes you swipe right?: Gender similarity in interpersonal attraction in a simulated online dating context. *Psi Chi Journal of Psychological Research, 23*(4), 320-329.

Pew Research Center. (2015). A deep dive into party affiliation. Retrieved from: https://www.pewresearch.org/politics/2015/04/07/a-deep-dive-into-party-affiliation/

Poulsen, S. S. (2003). Therapists' perspectives on working with interracial couples. *Journal of Couple & Relationship Therapy, 2*(2-3), 163-177.

Qian, Z., & Lichter, D. T. (2007). Social boundaries and marital assimilation: Interpreting trends in racial and ethnic intermarriage. *American Sociological Review, 72*(1), 68-94.

Rae, J. R., Newheiser, A. K., & Olson, K. R. (2015). Exposure to racial out-groups and implicit race bias in the United States. *Social Psychological and Personality Science, 6*(5), 535-543.

Rezaei, A. R. (2011). Validity and reliability of the IAT: Measuring gender and ethnic stereotypes. *Computers in Human Behavior, 27*(5), 1937-1941.

Rogers, T. N., Rogers, C. R., VanSant-Webb, E., Gu, L. Y., Yan, B., & Qeadan, F. (2020). Racial disparities in COVID-19 mortality among essential workers in the United States. *World Medical & Health Policy, 12*(3), 311-327.

Root, M.P.P. (2001). *Love's revolution: Interracial marriage.* Philadelphia: Temple University.

Rossen, L. M., Branum, A. M., Ahmad, F. B., Sutton, P., & Anderson, R. N. (2020). Excess deaths associated with COVID-19, by age and race and ethnicity—United States, January 26–October 3, 2020. *Morbidity and Mortality Weekly Report, 69*(42), 1522.

Rothstein, R. (2017). *The color of law: A forgotten history of how our government segregated America.* Liveright Publishing.

Sanders, C. E., Field, T. M., Miguel, D., & Kaplan, M. (2000). The relationship of Internet use to depression and social isolation among adolescents. *Adolescence, 35*(138), 237.

Schueths, A. M. (2015). Barriers to interracial marriage? Examining policy issues concerning US citizens married to undocumented Latino/a immigrants. *Journal of Social Issues*, *71*(4), 804-820.

Schmid, K., Marx, D., & Samal, A., (2006). Computation of a face attractiveness index based on neoclassical canons, symmetry, and golden ratios. *Faculty Publications, Department of Statistics.* Paper 12. http://digitalcommons.unl.edu/statisticsfacpub/12

Shibazaki, K., & Brennan, K. A. (1998). When birds of different feathers flock together: A preliminary comparison of intra-ethnic and inter-ethnic dating relationships. *Journal of Social and Personal Relationships, 15*(2), 248-256.

Shin, J. E., Suh, E. M., Li, N. P., Eo, K., Chong, S. C., & Tsai, M. H. (2019). Darling, get closer to me: Spatial proximity amplifies interpersonal liking. *Personality and Social Psychology Bulletin, 45*(2), 300-309.

Silk, I. B. (2001). Ties that bond: The role of kinship in primate societies. In L. Stone (Ed.), *New Directions in Anthropological Kinship*, 71-92. Roman & Littlefield Publishers, Inc.

Smedley, A., & Smedley, B. D. (2005). Race as biology is fiction, racism as a social problem is real: Anthropological and historical perspectives on the social construction of race. *American Psychologist, 60*(1), 16.

Soper, D.S. (2019). A-priori Sample Size Calculator for Structural Equation Models [Software]. Available from http://www.danielsoper.com/statcalc

Spencer, K. B., Charbonneau, A. K., & Glaser, J. (2016). Implicit bias and policing. *Social and Personality Psychology Compass, 10*(1), 50-63.

Sprecher, S. (2009). Relationship initiation and formation on the internet. *Marriage & Family Review*, *45*(6-8), 761-782. http://doi.org/10.1080/0149492090322435

StataCorp. 2021. Stata Statistical Software: Release 17. College Station, TX: StataCorp LLC.

Suler, J. (2005). The online disinhibition effect. *International Journal of Applied Psychoanalytic Studies, 2*(2), 184-188.

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,* 67-78. http://doi.org/10.1016/j.tele.2016.04.009

Taylor, P., Wang, W., Parker, K., Passel, J. S., Patten, E., & Motel, S. (2012). *The rise of intermarriage: Rates, characteristics vary by race and gender.* Washington, DC: Pew Research Center. Retrieved Press. http://www.pewsocialtrends.org/files/2012/02/SDT-Intermarriage-II.pdf

The OKCupid Blog (2014, September 9). Race and attraction, 2009-2014 [Blog post]. Retrieved from: https://theblog.okcupid.com/race-and-attraction-2009-2014-107dcbb4f060

Thomas, V., Wetchler, J. L., & Karis, T. A. (2003). Clinical issues with interracial couples: Theories and research. *Psychology Press, 2*(2-3), 1-19.

Thompson, D. (2009). Racial ideas and gendered intimacies: The regulation of interracial relationships in North America. *Social & Legal Studies*, *18*(3), 353-371.

Tinder. (2015, November 11). *You Asked, We Listened: The Best Tinder Experience Yet*. Retrieved December 19, 2015, from http://blog.gotinder.com/: http://blog.gotinder.com/

Todd, J., Mckinney, J. L., Harris, R., Chadderton, R., & Small, L. (1992). Attitudes toward interracial dating: Effects of age, sex, and race. *Journal of Multicultural Counseling & Development, 20*(4), 202-208.

Toosi, N. R., Babbitt, L. G., Ambady, N., & Sommers, S. R. (2012). Dyadic interracial interactions: A meta-analysis. *Psychological Bulletin, 138*(1), 1-27. http://doi.org/10.1037/a0025767

Troy, A. B., Lewis-Smith, J., & Laurenceau, J. P. (2006). Interracial and intraracial romantic relationships: The search for differences in satisfaction, conflict, and attachment style. *Journal of Social and Personal Relationships*, *23*(1), 65-80.

Tsunokai, G. T., Kposowa, A. J., Carroll, E., & Karamoko, M. (2019). The color continuum: Skin tone and online dating preferences among Asian Americans. *Journal of Social and Personal Relationships, 36*(11-12), 4027-4047.

Tyson, G., Perta, V. C., Haddadi, H., & Seto, M. C. (2016, August). A first look at user activity on Tinder. In *Proceedings of the 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining* (pp. 461-466). IEEE Press.

U.S. Bureau of Labor Statistics (2016). American time use survey (2003-2016). *Washington, DC*: U.S. Department of Labor. Retrieved from https://www.bls.gov/tus/datafiles_0316.htm

Vaillant, G. E. (2008). *Aging well: Surprising guideposts to a happier life from the landmark study of adult development*. Hachette UK.

Vanderdrift, L. E., Lehmiller, J. J., & Kelly, J. R. (2012). Commitment in friends with benefits relationships: Implications for relational and safe-sex outcomes. *Personal Relationships*, *19*(1), 1-13.

Wagner, B. G., Choi, K. H., & Cohen, P. N. (2020). Decline in marriage associated with the COVID-19 pandemic in the United States. *Socius, 6*, 1-8. http://doi.org/10.1177/2378023120980328

Wang, H., Kao, G., & Joyner, K. (2006). Stability of interracial and intraracial romantic relationships among adolescents. *Social Science Research, 35*(2), 435-453.

Webster, M. & Driskell, J.E. (1983). Beauty as status. *American Journal of Sociology, 89*(1), 140-165.

Wehrly, B., Kenney, K. R., & Kenney, M. E. (1999). *Counseling multiracial families* (Vol. 12). Sage.

Weitz, R., & Gordon, L. (1993). Images of Black women among Anglo college students. *Sex Roles, 28*(1), 19-34.

Whitty, M. T., & Carr, A. N. (2006). *Cyberspace romance: The psychology of online relationships.* Palgrave Macmillan.

Yancey, G.A. (2002). Who interracially dates: An examination of the characteristics of those who have interracially dated. *Journal of Comparative Family Studies, 33*, 179-190.

Yancey, G. A. (2007). *Interracial contact and social change*. Boulder, CO: Lynne Rienner Publishers.

Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology, 9*(2, Pt.2), 1-27. http://doi.org/10.1037/h0025848

Zebroski, S. A. (1999). Black-White intermarriages: The racial and gender dynamics of support and opposition. *Journal of Black Studies, 30*(1), 123-132.

Zebrowitz, L. A., White, B., & Wieneke, K. (2008). Mere exposure and racial prejudice: Exposure to other-race faces increases liking for strangers of that race. *Social Cognition, 26*(3), 259-275. https://doi.org/10.1521/soco.2008.26.3.259

Zhang, Y., & Van Hook, J. (2009). Marital dissolution among interracial couples. *Journal of Marriage and Family, 71*(1), 95-107.

Zhang, J., & Yasseri, T. (2016). *What happens after you both swipe right: A statistical description of mobile dating communications.* Cornell University, Ithaca NY. https://arxiv.org/abs/1607.03320

Zheng, R. (2016). Why yellow fever isn't flattering: A case against racial fetishes. *Journal of the American Philosophical Association, 2*(3), 400-419.

Zubof, S. (1988). *In the age of the smart machine: The future of work and power.* Basic Books, Inc.

Appendix

Table 1
Religious Affiliation

Religious Affiliation	n=	Percent
Christian	**233**	**44%**
Protestant	128	25%
Roman Catholic	85	16%
Orthodox Christian	11	2%
Mormon	9	2%
Nones	**230**	**44%**
Atheist	40	8%
Agnostic	64	12%
No Affiliation	126	24%
Other	**55**	**11%**
Jewish	16	3%
Muslim	8	2%
Buddhist	3	1%
Hindu	0	0%
Other	28	5%
Total:	518	100%

Table 2
Religiosity Scores

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
Religion Importance	518	3.3	1.93	1	7
Frequency of Attendance	515	2.9	1.84	1	7
Frequency of Prayer	514	3.8	2.40	1	7
Total Religiosity	512	10.0	5.43	3	21

Table 3

Mixed Effects Logistical Regression: Effects of Race, Motivation, and Interaction Effects.

Variable	OR	SE	p=	95 CI
Constant	3.717	.253		3.252 - 4.248
Motivation Prompt				
Friends	2.345**	.114	.000	2.132 - 2.581
Sex	1.367**	.027	.000	1.244 - 1.503
Date	.983	.048	.723	.894 - 1.081
Marry	.547**	.027	.000	.496 - .603
(base=General)				
Racial Group				
Asian	.545**	.027	.000	.495 - .601
Hispanic	.479**	.023	.000	.434 - .528
Black	.357**	.018	.000	.323 - .395
(base=White)				
Interactions				
Friends x Asian	1.193*	.084	.012	1.039 - 1.369
Friends x Hispanic	1.310**	.091	.000	1.143 - 1.501
Friends x Black	1.469**	.103	.000	1.279 - 1.686
Sex x Asian	1.038	.073	.598	.904 - 1.191
Sex x Hispanic	1.173*	.082	.022	1.023 - 1.344
Sex x Black	1.098	.078	.187	.956 - 1.262
Date x Asian	1.028	.073	.699	.894 - 1.182
Date x Hispanic	1.137	.080	.068	.991 - 1.305
Date x Black	1.109	.080	.150	.963 - 1.277
Marry x Asian	1.203*	.088	.011	1.043 - 1.388
Marry x Hispanic	1.296**	.094	.000	1.125 - 1.496
Marry x Black	1.328**	.098	.000	1.487 - 1.535

Table 4

Mixed Effects Logistic Regression to Create Interaction Coefficients

Variable	OR	SE	p=	95% C.I.
Constant	3.72	.253		3.252 - 4.248
Racial Group				
Asian	.339**	.031	.000	.283 - .406
Hispanic	.297**	.027	.000	.248 - .356
Black	.222**	.021	.000	.185 - .266
White	.622**	.057	.000	.520 - .743
Interactions				
Friends x Asian	2.798**	.142	.000	2.533 - 3.091
Friends x Hispanic	3.072**	.153	.000	2.786 - 3.388
Friends x Black	3.445**	.176	.000	3.117 - 3.807
Friends x White	2.345**	.114	.000	2.132 - 2.581
Hookup x Asian	1.419**	.073	.000	1.284 - 1.569
Hookup x Hispanic	1.604**	.081	.000	1.453 - 1.770
Hookup x Black	1.502**	.078	.000	1.356 - 1.663
Hookup x White	1.367**	.066	.000	1.244 - 1.503
Date x Asian	1.010	.053	.843	.913 - 1.119
Date x Hispanic	1.118*	.057	.029	1.011 - 1.235
Date x Black	1.090	.058	.104	.982 - 1.210
Date x White	.983	.048	.723	.894 - 1.081
Marry x Asian	.658**	.035	.000	.593 - .731
Marry x Hispanic	.709**	.037	.000	.640 - .786
Marry x Black	.726**	.040	.000	.652 - .809
Marry x White	.547**	.027	.000	.496 - .603

Table 5

Analyses of Linear Combinations of Parameters

Variable	OR	SE	p=	95% C.I.
(Compared to White women)				
ΔFriends-Sex				
Asian	.870	.061	.049	.758 - 1.000
Black	.748**	.052	.000	.652 - .857
Hispanic	.895	.062	.108	.783 - 1.024
ΔSex-Date				
Asian	.990	.071	.893	.861 - 1.139
Black	1.010	.072	.890	.879 - 1.160
Hispanic	1.000	.067	.657	.846 - 1.111
ΔDate-Marry				
Asian	1.170	.087	.033	1.013 - 1.353
Black	1.197	.088	.015	1.036 - 1.383
Hispanic	1.140	.082	.070	1.000 - 1.313
ΔFriends-Marry				
Asian	1.009	.074	.907	.874 - 1.164
Black	.904	.065	.163	.784 - 1.042
Hispanic	1.000	.071	.883	.860 - 1.138

Table 6

Mixed Effects Logistic Regression with Effects of Predictor Variables and Openness

Variable	OR	SE	p=	95 CI
Constant	.2.901	.202		2.534 - .692
Racial Group				
Asian	.024**	.012	.000	.009 - .062
Black	.009**	.005	.000	.004 - .024
Hispanic	.025	.012	.000	.010 - .065
White	.081**	.039	.000	.031 - .209
Open X Race				
Asian	1.120	.013	.000	1.095 - 1.145
Black	1.135	.013	.000	1.109 - 1.160
Hispanic	1.110	.013	.000	1.085 - 1.134
White	1.089	.012	.000	1.064 - 1.113
Income X Race				
Asian	.918	.066	.231	.797 - 1.056
Black	1.018	.073	.806	.884 - 1.172
Hispanic	.974	.070	.709	.846 - 1.120
White	.882	.063	.077	.766 - 1.014
Religiosity X Race				
Asian	1.102	.015	.427	.983 - 1.043
Black	1.029	.016	.055	.999 - 1.060
Hispanic	1.034	.016	.026	1.004 - 1.065
White	1.029	.016	.054	1.000 - 1.060
Education X Race				
Asian	.969	.082	.712	.820 - 1.145
Black	.931	.079	.401	.788 - 1.100
Hispanic	.900	.076	.215	.762 - 1.063
White	1.000	.084	.972	.845 - 1.177
Politics X Race				
Asian	.957	.079	.588	.814 - 1.124
Black	.939	.077	.440	.799 - 1.103
Hispanic	.965	.079	.665	.822 - 1.133
White	.947	.077	.509	.807 - 1.112
Region X Race				
Asian	1.426	.281	.072	.968 - 2.098
Black	1.107	.218	.608	.752 - 1.629
Hispanic	1.317	.259	.161	.896 - 1.938
White	1.359	.267	.119	.924 - 1.997

Table 7

Linear Regression of Relationship Between Predictor Variables and Openness

Variable	Coef.	SE	t-score	p=	95% C.I.
Constant	24.00	.116	207.72	.000	23.770 - 24.223
Income	-0.188**	.020	-9.26	.000	-.0.228 - -0.149
Political Ideology	1.283**	.023	55.86	.000	1.238 - 1.328
Religiosity	-0.011*	.004	-2.44	.015	-.0190 - -0.002
Education	.303**	.024	12.56	.000	.256 - .350
Region (“South”)	-0.233**	.056	-4.16	.000	-0.344 - -0.123