"How Tinder and the dating apps Are
and are *Not* changing dating and mating in the U.S."

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Abstract:

I use in-depth interviews and a new national survey to examine how people use phone dating apps (such as Tinder and Grindr), and how often they use them, and why. Gay men are the most active users of the phone dating apps. Unpartnered heterosexual adults do not use the phone dating apps very often, and meet few new partners through the phone dating apps. According to the survey data, more than 80% of unpartnered heterosexual adults have not gone on any dates or met any new people in the past 12 months, which suggests that being unpartnered is a more stable status for heterosexual adults than previously thought.

Introduction:

The popular media coverage of Tinder and phone dating apps in general tends to favor a kind of social doomsday scenario. Tinder and phone apps are supposedly undermining relationship commitment, and making everyone superficial and prone to empty hookups. In Nancy Jo Sales' (2015) Vanity Fair story "Tinder and the Dawn of the 'Dating Apocalypse,'" all the stereotypes of online dating were presented. According to Sale's dystopian vision, people don't even look at each other anymore, they only look at their phones. Sales interviewed young heterosexual male Tinder users who claimed to be using Tinder and other phone apps to hook up with 100 new women per year. Men however, have been known to exaggerate their sexual exploits (Lewontin 1995).

Hookup culture does exist (Bogle 2008), and the phone apps like Tinder and Grindr do facilitate hookups, some of which are intentional one night stands, and others of which start out as one night stands and then blossom into long term relationships. Either the hookup or the long term relationship outcome can be positive outcomes, depending on what the individuals want. Some individuals want neither long term relationships nor hookups, but might prefer nothing more than an occasional flirtation; phone dating apps can provide simple flirtations as well.

One of Life Course theory's central themes is that an individual's roles change over the life course, and behavior necessarily changes across the life course as roles change (Elder 1975). As Bogle's (2008) book *Hooking Up* made clear, adults are perfectly capable of going through a phase of hookups without any commitment, and then transitioning to committed relationships in a later life stage. One of the misleading ingredients in Sales' (2015) article is Sales' implication that the reliance on hookups among her young single subjects portends the end of committed relationships for everyone, (i.e., the 'dating apocalpyse').

In scholarly writing about the Internet's effect on social interaction, negative views of the Internet's supposed impact predominate (Rosenfeld 2017), much as negative views of Internet dating

predominate in the popular press. Turkle (2011; 2015), one of the most prominent scholarly Internet skeptics, has argued that the new technologies have robbed us of the skills to be effective listeners in face-to-face interactions, because the cell phone in one's pocket is potentially always distracting one's attention away from the people who are physically present. Primack et al (2018) in this volume argue that depression and anxiety are associated with over-use of online social networking. If the Internet undermines our relationships, then the social effects of the Internet are to be feared.

Hertlein (2018) in this volume reports that some couples have trouble managing the boundaries between their relationship and the outside world, because the Internet and the cell phone erode those boundaries. Couples who disagree about how to manage the technology in their lives often find themselves in couples' therapy, leaving therapeutic professionals to see mainly the downsides and dysfunctions of technology's incorporation with personal life. Hertlein also notes that there are many potential ways that new technologies can be adaptive and assistive in relationships. The positive impacts of technology on relationships are less visible to therapeutic professionals, because people who have healthy relationships and who have found appropriate norms and positive ways to use the new technology do not generally end up in therapy. Wellman (2001) and McKenna and Bargh (2000) and Glassner (2010) all offer a positive view of the Internet's effect on social relationships at the population level. It is reasonable to assume that the new technologies may have negative effects on some individuals and positive effects on others. A composite of negative effects of technology on some individuals and positive effects on others could yield neutral effects of technology in the aggregate.

Some scholars and journalists have claimed that romantic relationships formed online are necessarily shallow and less committed (Manning 2006; Weigel 2016; Slater 2013; Turkle 2011; Turkle 2015; Young 1998) compared to relationships formed offline. Research with nationally representative data, however, has shown that couples who meet online are no more likely to break up (Cacioppo et al. 2013; Rosenfeld 2017; Rosenfeld and Thomas 2012). In contrast to the predictions about how online

dating might undermine the stability of romantic relationships, Rosenfeld (2017) finds that heterosexual couples who met through online dating transitioned to marriage more quickly.

One potential reason for the faster transition to marriage for couples who met through Internet dating may be that the wider choice set of partners available online leads to better matches. To the extent that the mate selection process is an information gathering process (Oppenheimer 1988), the greater amount of information available on Internet dating websites may allow couples to gather information about each other more quickly. Selection bias is a third potential reason for faster transitions to marriage for couples who met through Internet dating: marriage-ready individuals may select themselves into Internet dating.

In this paper I endeavor to measure the impact of Tinder and the other phone dating apps on dating and on existing romantic relationships in the U.S. I find that, except for gay men who are avid users of the phone apps (Grindr especially), the phone dating apps are having only a very modest impact on Americans' romantic lives.

Despite the claims that Tinder and Grindr and phone dating apps in general have created an environment of non-stop hookups, I show that the majority of unpartnered heterosexual men and women in the U.S., more than 80% in fact, have not gone on any dates in the past 12 months. Far from oversexed, heterosexual Americans who are unmarried and unpartnered appear to be in something of a relationship drought, or perhaps they are satisfied with their single status, and not working too energetically to acquire a partner. The viability of singlehood as a permanent or semi-permanent adult status has increased over time (Klinenberg 2012) as the age at first marriage has increased (Rosenfeld 2007), and as interest in remarriage (especially among older women) has declined (Rosenfeld forthcoming). In this paper I employ in-depth interview data and new nationally representative survey data to explore how, how often, and why American adults use phone dating apps like Tinder and Grindr.

According to 2017 survey data from the How Couples Meet and Stay Together project (see Table 2) only 18.7% of unpartnered heterosexual men and only 11.4% of unpartnered heterosexual women in the U.S. went on any dates in the past 12 months, which means more than 80% of unpartnered heterosexual American adults report meeting exactly zero people for dates or hookups in the past 12 months. Heterosexuals who used Tinder and other phone apps to meet people for sex or romance in the past 12 months, met an average of 5 people for sex or romance in the last 12 months, far less than the scores or hundreds of hookups claimed by the people interviewed by Nancy Jo Sales. Perhaps Nancy Jo Sales was talking to an unusually sexually active and popular subset of American men. Our in-depth interviews about Tinder and dating reflect the same order of magnitude of dates and hookups per year as do the nationally representative data: between zero and five dates or hookups with new people per year. It may be that the sexuality and attractiveness of Sales' subjects (with their 100 partners per year) was exaggerated for the audience's titillation. It would not be the first time that sex and hyperbolic descriptions of technology's impact were combined to drive some other goal, such as readership or viewership, or conservative political action.

Best and Bogle (2014) describe recent moral panics over behaviors ("sex bracelets" and "rainbow parties") that were supposed to document the sexual profligacy among American youth. Sex bracelets were colored bracelets that adolescent girls were wearing, reportedly to symbolize which sexual acts they had experienced. Rainbow parties were parties in which adolescent girls wearing different colored lipsticks were reported to have given oral sex to adolescent boys, resulting in rainbow striped penises. Both the "sex bracelet" and the "rainbow party" stories were widely covered in the popular media, but Best and Bogle demonstrate that there never were any rainbow parties or sex bracelets. Moral panic can occur when fear and uncertainty override and drown out data and information. Sexuality and technology are both subjects that stimulate fear and anxiety, and therefore sexuality and technology are natural terrain for moral panics.

Social media online use and phone dating have risks, some of which are new and specific to the cell phone. Sending nude pictures of oneself to a partner, or a potential partner, is sexting. When the recipient of the intimate pictures shares them indiscriminately, that verges into revenge porn, a problem that has potential elements of harassment and extortion (Lohmann 2013; Jeong 2013). The new technologies are certainly not without their potential dangers and pitfalls. Internet dating and the phone apps have some unique advantages as well. For instance, it is much easier to block unwanted advances on Tinder compared to blocking the unwanted advances of someone who is standing next to you at the bar or at the party. The ability of the phone dating apps to quickly and permanently block anyone who makes unwanted advances is one reason some of our female interviewees felt that the phone dating apps have improved the safety of dating and hooking up (See, for instance, descriptions of the feminist utility of using Tinder to reduce men's control over dating, such as Massey 2015). The interesting question is whether and for whom the benefits of the new technologies outweigh the risks and pitfalls.

The Data:

I rely on two distinct data sources. The first data source is in-depth interviews (lasting 2-4 hours) with 10 adult subjects about Tinder and dating. These 10 Tinder-related interviews, conducted in 2015 and 2016 by Rosenfeld and Taylor Orth and other students, are part of a larger body of more than 50 in-depth interviews that Rosenfeld, along with students, has undertaken with individuals and couples in the San Francisco Bay Area about relationships and breakups. The interviews were recorded and transcribed. All names and identifying details have been changed.

The second data source is the 2017 fresh data cohort of the How Couples Meet and Stay Together study (hereafter HCMST 2017; for prior waves 1-5 of public data from the HCMST 2009 cohort, see Rosenfeld, Thomas and Falcon 2015), a nationally representative study which surveyed 3,510

American adults in the summer of 2017. As of this writing HCMST 2017 data are not yet publicly available, but the HCMST 2017 data will soon be available at https://data.stanford.edu/hcmst. Of the 3,510 adults surveyed in HCMST 2017, 2,856 had a current spouse or partner, 538 subjects were unpartnered, and an additional 107 subjects (mostly young adults) reported never having had a boyfriend, girlfriend, romantic partner or sexual partner. The HCMST 2017 definition of current partner is a broader definition than most surveys use, including not only spouses, boyfriends, and girlfriends, romantic partners, and sexual partners, but also including a "romantic partner who is not yet a sexual partner" (Question S2). Therefore unpartnered subjects in HCMST 2017 are, as far as can be determined, *truly* unpartnered. The 107 subjects who reported never having had a romantic partner are not included in the analyses below. According to the weighted HCMST 2017 data, 61% of heterosexual American adults are married, 20% are partnered but not married, 15% are unpartnered (but had at least one partner in the past), and 4% (mostly men in their 20s) have never had a partner. HCMST 2017 oversampled self-identified gay, lesbian, and bisexual subjects, who are more likely to meet partners online than are heterosexuals (Rosenfeld and Thomas 2012). Of the 3,394 HCMST 2017 subjects who had ever had a sexual or romantic partner, 551 self-identifed as gay, lesbian or bisexual.

HCMST 2017 subjects were asked about dating and hookups in the past 12 months (question w6_otherdate): " In the past year, have you ever met someone for dating, for romance, or for sex?" if they answered "yes", the next question (question w6_how_many) asked how many people they had met for dating, romance, or sex in the past year, with closed ended choices of: 1 person, 2-5 people, 6-20 people, 21-50 people, and more than 50 people. I took the median of each category as the number of people met, and used the value of 75 for the number of people met last year for the two HCMST 2017 subjects who said they met more than 50 people in the prior 12 months. Subjects with spouses or current partners were asked the same questions, about meeting people for dates, romance, or sex in the previous 12 months, with the clarifying clause "besides partner_name"? where partner_name is the

name they reported for their current spouse or partner. HCMST 2017 allows for estimates of the dating behavior of both partnered and single adults in the U.S. After the questions "w6_otherdate" and "w6_how_many," the same questions were posed to subjects who had met at least one person in the past 12 months, but specifically about meeting through phone apps. Question "w6_otherdate_app" asked "In the past year, have you ever used an app on your phone (such as Tinder or Grindr) to meet someone in person, for dating, romance, or sex?" and the follow-up question asked them "Of the people you met in the past year, how many did you meet using phone apps (such as Tinder or Grindr)?"

HCMST 2017 includes information about fidelity and monogamy of married and currently partnered adults, and how much of the infidelity or nonmogamy might be associated with phone apps or Internet dating. The results in Tables 1 and 2 below are weighted by the weight variable "weight_combo," which weights the population to demographic benchmarks from the Current Population Survey, and which also accounts for the oversample of self-identified lesbian, gay, or bisexual adults in HCMST 2017.

The survey data and the interview data complement each other. The survey data provide a representative snapshot of how often U.S. adults go on dates or meet people for hookups, and how they find their partners. The non-representative interview data provide detail and insight into why people make the dating choices they make. In order to understand the *why*, one has to talk to subjects face-to-face in an unscripted way, for long enough to make them comfortable telling their stories, and long enough for the interviewers to be able to understand their motivations. I begin with summaries of two interviews.

What people say about how they use phone dating apps:

1) Wilson.

Wilson is an engaging and slightly heavy-set Filipino-American man, in his mid thirties. In his 20s, he had a series of three long term cohabiting relationships with women, none of which ended well. His high school girlfriend was from a higher social class than Wilson, and reminded him of this unequal origin from time to time. Wilson dated his high school girlfriend into college, and found that she treated him badly, and sometimes gave him the cold shoulder. Eventually, they broke up.

Wilson's second girlfriend was a woman he lived with for four years after college. Wilson describes this woman as engaging and charismatic, but also moody and difficult. On several occasions, Wilson came home and found that some of his belongings were missing from the apartment. He eventually found that his belongings had been dropped out of the apartment window, onto the parking lot below. On one occasion, as he was walking to a conference room in his technology job to give a presentation. He was previewing the slides, and he found that there was a slide of pornography inserted into his presentation. He deleted that slide, and gave the presentation without any problems. His girlfriend later admitted to adding the porn to his work presentation. They broke up when the girlfriend later moved away for professional school, and Wilson says that she is the only girlfriend he has ever missed.

Wilson's third girlfriend was mature, organized, successful, and was constantly berating Wilson to get a promotion at work, to marry her, to make a plan to settle down and have kids. Wilson felt he was not ready to get married and have kids, and he was not particularly interested in a promotion at work. Wilson liked to have time free on the weekends for video games, but this girlfriend wanted to schedule all his free time. After 3 years together, they broke up. Wilson's three long term girlfriends each contributed evidence to his view that "women are crazy."

Wilson is a refugee from the land of committed relationships. His three cohabiting relationships were full of struggle and drama, none of which he misses in his current state of living alone. His current dating strategy is hookups arranged via phone dating apps, mainly Tinder. He appreciates the fact that

most of the women he meets through Tinder don't want a relationship any more than he does. In the

past 3 years, he has used phone dating apps to meet with 12 separate women, and had sex with 10 of

them. Of the 10 women he had sex with, he has only seen one woman more than once, and that

occasional hookup relationship lasted 3 months.

The yield for Wilson, in terms of sexual frequency, or sexual encounters per year divided by time

spent on the phone dating apps, is low compared to the sexual frequency of married people, for

instance (married people report having sex about twice a week, see Laumann et al. 1994 p.88). One of

the basic rules of sex and relationships is that married people, and people with cohabiting partners,

have more sex because they have most of the sexual access problem already solved (Laumann et al.

1994; Waite and Gallagher 2000). Tinder and the phone dating apps have not entirely removed the

barriers that make it difficult for strangers to hook up. Lining up a date with a stranger is and always will

be emotionally taxing. Even flirting with people who one never plans to go on dates with is time

consuming, as is making arrangements to go on dates that might not actually take place.

Wilson opens Tinder on his phone Friday and Saturday afternoons, swipes right on a few

pictures, and tries to find a local woman who is interested in meeting up that night. He says 60% of the

women on Tinder check "yes" that they are willing to hook up. He ignores the other 40%. In his view,

Tinder is not a place where anyone should expect to find long term relationships, that would be "like

shopping for filet mignon at Target." He finds Tinder women to be even more committed to a no-strings-

attached encounter than he is. The women he messages on Tinder follow a clear pattern of not over-

messaging, and not over-sharing. They never talk about commitment, or about the possibility of settling

down one day. A few short texts, a meeting, a hookup, and then they part ways. He says women usually

ask him a few questions to make sure he is not an ax murderer, and then, according to Wilson, "they get

down to business."

2) Shae:

Shae is an attractive white woman in her mid twenties. She grew up in a small town in the Midwest. Her mother knew the other mothers in town, and communication between the mothers meant that when Shae was in high school, she never got to spend any time in a room alone with a boyfriend, because the mothers did not allow it. When Shae went away to college, she was frustrated and she wanted to have a lot of experiences to catch up. She became a party girl in college, meeting young men, hooking up and making out.

Shae had one bad experience in college in which she was drunk at a party, and a male student she knew from political work said he would drive her home, but instead he drove her to his place and groped her, and she was too drunk and disoriented to do anything about it. This sour experience that Shae recognizes as a sexual assault, dampened her enthusiasm for partying. She never told her friends or the college authorities about it.

Shae had two serious boyfriends after college, but neither relationship lasted, and neither boyfriend was popular with Shae's friends because both boyfriends, were, in retrospect, "jerks." The problem, Shae realized that the kind of young men who sought her out at parties were the alphas-strong, tall, self-assured, take-charge young men. Shae was attracted to the alpha men at first, but always found that their views on politics and relationships were out of step with her own- she describes herself as a "flag waving feminist." If there were more compatible men in Shae's social circle, Shae found that she did not get to know them well enough. The alpha males had gotten to her first, and Shae was too shy to push past the alphas at the party and find the nerdy politically progressive and quieter young men she might have been more compatible with.

One advantage that Shae experienced immediately with Tinder was her ability to be agentic about whom she was in communication with. Both parties in Tinder have to swipe right on each other's

profile in order to start communicating. Even after swiping right, if the other person sent messages Shae did not like, the other party was easy to block. Once blocked, the other party would never be heard from again.

Shae met Danny through Tinder, Danny was her first Tinder date. Shae was on the way to meet friends on a Friday afternoon, but she was stuck in traffic and it was raining, and she decided to bail out on her friends' plan, and log on to Tinder instead. She swiped on Danny's profile, then messaged him, and arranged to meet him for dinner. After dinner, when Shae said "let's go back to your place," she could tell that Danny was happy but was a bit flustered, and she liked flustering him. They had sex that night. Danny had been on two Tinder dates before, with other women, neither of which dates ended up with more than a kiss on the cheek, so Danny was not expecting sex on his first date with Shae. Danny was shy and soft spoken, two things Shae immediately liked about him.

Shae did not necessarily expect to hear from Danny the next day, but the next day he did text her. She went on a few random dates with other people she met on Tinder, but she found them boring. Two months after first meeting Danny, Shae proposed that they date exclusively, and Danny was a little bit surprised that Shae had been seeing other people. The next month, they became officially boyfriend and girlfriend. Now they live together. Danny is the most important person in Shae's life, her first ever live-in boyfriend, the first partner she has ever had who has treated her the way she wants to be treated, and she met him through a Tinder hookup. They have been together for 3 years.

For Shae, Tinder had immediate advantages. She was in control of who she would communicate with in a way that gave her more agency than she had had in face-to-face social situations. Compared to being at a bar, being on Tinder allows people to break off communication with others who irritate them, and sift through candidates more safely, before first face-to-face contact. One of the critiques of Tinder and the various new online dating technologies, is that the new technologies undermine relationship

commitment. The nationally representative data and stories like Shae's tend to paint the phone apps

and Internet dating in general in a more commitment-neutral light.

[Table 1 here]

What the survey data show:

1) Dating habits of currently married and partnered adults.

How reflective are the interview stories of the experience of all adults in the U.S.? To answer

that question, I turn to the survey data. Table 1 shows an analysis of dating and hooking up in the

previous 12 months among HCMST subjects who had a current partner at the time of HCMST 2017, and

had been in the relationship with the current partner since at least 2015. Since all respondents

represented in Table 1 were partnered at the time of HCMST 2017, the questions that they were asked

about dating in the past 12 months all had the preface "besides partner_name" (where partner_name is

the name they offered for their current spouse or partner), so the dating and hookup behavior reported

in Table 1 excludes dates with the current partner. Because I included in Table 1 only subjects who had

been in their current relationships for more than 1 year, Table 1 describes dating or hooking up that

would fall for most subjects into the categories of either nonmonogamy or infidelity. Note, however,

that we do not know from HCSMT 2017 whether the subject's relationship with the partner from HCMST

2017 may have been interrupted during the 12 months prior to the fielding of the survey, which

introduces a third possibility (in addition to nonmonogamy and infidelity): taking a break from the

HCMST 2017 partner to date other people.

Table 1 shows that for married people with different sex (i.e. heterosexual) partners, only a very

small percentage (3.4% of men, and 1.6% of women) admitted to meeting someone other than their

spouse in the past 12 months for dating, romance or sex. Men may be more prone to marital infidelity,

or men may be more willing to admit infidelities. For heterosexual men and women, and for lesbians, being married (as compared to be partnered but not married) is associated with a sharp reduction in percentage of subjects who said they met someone other than their partner for dating, romance, or sex in the past 12 months. For heterosexual men, being married reduces the percentage of men who date outside the relationship from 18.6% to 3.4%, and for heterosexual women being married reduces the percentage of outside dating from 14.4% to 1.6%. For lesbians, being married reduces the percentage who date outside the relationship from 30% to 3%.

For gay men, however, being married appears to be uncorrelated with monogamy. Twenty four percent of gay men who were partnered but not married said they met someone other than the main partner for dating, romance, or sex in the past 12 months, compared to 21% of gay men who were married who said they met someone other than the spouse for dating, romance, or sex in the past 12 months. Given the fact that gay male relationships are more stable than lesbian relationships in the U.S. (controling for marital status, see Rosenfeld 2014), it is possible that gay male relationships have a higher tolerance for nonmonogamy (D'Emilio 2002).

Note that, among the dates and hookups that married heterosexuals report having with people other than their spouses, only a small percentage (16% for men, 12% for women) were arranged through the phone dating apps. For heterosexual married individuals, the phone dating apps were not a major draw. It is unlikely, therefore, that the existence of phone dating apps would have a destabilizing effect on heterosexual marriages in the U.S., as most heterosexual marital nonmonogamy and infidelity seems to have been arranged in other ways, and as few married heterosexuals admit to dating anyone other than their spouse in the first place.

As has been noted previously (Rosenfeld and Thomas 2012), online meeting plays a larger role for same-sex couples than for heterosexual couples (see also McKenna and Bargh 1998). Table 1 reports that 67% of the dating and hookup partners that married gay men found (and 85% of the dating or

hookup partners that unmarried gay men found) in the past 12 months, were found through the phone dating apps. For gay men, Grindr (which caters exclusively to gay men) is the dominant phone app, followed in a distant second by Tinder (which allows same-sex and different sex matches).

There was only one married lesbian woman in HCMST who dated outside the marriage, and she met only one person, so the sample is too small to say anything meaningful about how married lesbian women find partners outside of their marriages.

[Table 2 here]

2) Dating habits of adults who do not have a current partner

Among the unpartnered (meaning no spouse, no boyfriend, no girlfriend, no sexual partner, and no current romantic partner who could become a sexual partner later) heterosexuals who were actively dating in the past 12 months, Table 2 shows a modest number of different partners from dating and hookups. According to Table 2, the actively dating (meaning they met at least 1 new date or partner in the past 12 months) unpartnered heterosexual men in the U.S. met an average of 2.4 partners for dating or sex in the past 12 months. Unpartnered heterosexual women who were actively dating met an average of 5.1 partners in the past 12 months. These modest numbers of different people met for dating and hookups are consistent with what our interview subjects report, and are consistent with the distribution of sexual partner frequency found by Laumann et al (1994 p.177) and entirely out of line with the most exaggerated reports about hookup activity from the popular press (Sales 2015). The modest number of people met for dates or hookups in the past 12 months (2.4 for men, 5.1 for women) include only the unpartnered heterosexual adults who were *actively* dating. The survey data show that a large majority of unpartnered heterosexual adults were meeting no one at all in the past 12 months.

Of heterosexual men in the U.S. who did not have a partner at the time of HCMST 2017, only 18.7% said they had met someone in the past 12 months for dating, romance, or sex. Interestingly, the percentage of heterosexual men who met at least one partner in the last 12 months is around 19% whether the men are unpartnered (Table 2), or partnered but not married (see Table 1 above).

For heterosexual women without a current partner, only 11.4% said they met someone for a date or a hookup in the past 12 months, not statistically significantly different from the 14.4% of partnered but unmarried women who met someone other than the main partner in the past 12 months (see Table 1 above).

There are several potential reasons why heterosexuals who are partnered but not married have the same probability of having dates and hookup partners (other than their primary partner) as unpartnered heterosexuals have in finding any partners. It may be that partnered relationship status selects for people who are more appealing as partners, and that the unpartnered heterosexuals have characteristics that make them less appealing as dates. Alternatively, it may be that unpartnered heterosexuals are as committed to being single as partnered (but unmarried) heterosexuals are committed to their partners. Heterosexual relationships that lack the marital commitment appear to impose few constraints on dating outside the relationship.

For heterosexual men who did not have partners at the time of HCMST 2017, the phone dating apps accounted for only 8% of women they had met in the previous 12 months. Note that, even though the unpartnered heterosexual women had a lower rate of meeting people for dates or romance or sex in the past 12 months compared to unpartnered heterosexual men (11.4% compared to 18.7%), the heterosexual women who did go on dates were more likely to have met their dates using phone apps (22% compared to 8% for heterosexual men). The greater likelihood of heterosexual women's partners to have been found through the phone apps (see also Table 1 above) is an indication that the phone dating apps may be more empowering to or useful to women, as Shae's story above also indicates.

As would be expected from prior research (Rosenfeld and Thomas 2012), gay and lesbian respondents were much more likely than heterosexuals to meet their dates using phone apps. Interestingly, unpartnered gay men and unpartnered lesbians seem to have substantially more active dating lives than do heterosexuals. Whereas only 18% of unpartnered heterosexual men met someone for dating, romance, or sex in the past 12 months, 44% of unpartnered gay men did so. And whereas only 11.4% of unpartnered heterosexual women met someone in the past 12 months for dating, romance, or sex, 16% of unpartnered lesbians did so (though the numbers of unpartnered lesbians in HCMST 2017 is small). The dating activity gap between straight and gay Americans may suggest that the market for dating apps that appeal to heterosexuals has not yet matured. There may be a substantial pool of unmet interest among heterosexuals in finding appropriate partners.

[Table 3 here]

3) Who uses which phone dating apps:

Among heterosexual American adults, only 1.4% of men and 1.3% of women reported using a phone dating app in the past 12 months to meet someone for dating, romance, or sex. There are several reasons the rate of phone dating app use among heterosexuals is so low. First, most adult heterosexuals are married, and married heterosexuals are rarely on the dating market. Second, when unmarried heterosexuals do date, they mostly use other ways of finding dates rather than the phone dating apps. Third, most unpartnered heterosexuals are not meeting anyone new. When heterosexuals are using the phone dating apps, Tinder is the first choice, followed by MeetMe and OKCupid for men, and followed by Bumble and Plenty of Fish for women.

Unlike heterosexual dating culture which has *not* been taken over by the phone dating apps, gay male dating culture is powerfully driven by the phone dating apps. 18.4% of the gay men in HCMST

2017, regardless of their partnership or marital status, used a phone dating app to meet someone in the past 12 months. Among gay men, Grindr is the king of the apps, followed in a distant second by Tinder, and then Adam4Adam. One gay male interviewee reported that Grindr was a terrible app, it has a tendency to crash and its user interface is clumsy. What it has going for it, however is simple: the large number of gay men who are on it.

Conclusions:

For heterosexuals, the impact of the phone dating apps on their dating lives has clearly been overstated in the popular press. Tinder is not, as Sales (2015) suggested, a sign of "the dating apocalypse." Most heterosexuals are stably married, and there is no evidence that the phone dating apps or any other modern technology have undermined or will undermine relationship stability in the U.S. Rather than following the phone dating apps to a frenzied series of dates, what is interesting about unpartnered heterosexuals is how few of them date at all. More than 80% of unpartnered heterosexual women and unpartnered heterosexual men reported meeting exactly zero new people for dates or hookups in the past 12 months. Given how few actual face-to-face dates seem to be obtained through Tinder and the phone dating apps, it is possible that the main utility of phone dating apps for heterosexuals is for flirting or for browsing pictures, rather than for dating or for hooking up.

My findings of the romantic and sexual inactivity of unpartnered heterosexual adults in the U.S. do not entirely square with previous findings of the number of sexual partners that adults who are not married and not cohabiting have had in the prior year (Laumann et al. 1994 p.177). One potential reason for the discrepancy is that HCMST has a wider definition of romantic partners than other surveys have had. The unpartnered subjects in HCMST may be far outliers of romantic inactivity, a population not well enough isolated in other surveys. The National Survey of Family Growth, the leading survey of

relationships and fertility in the US, privileges marriages and cohabitation relationships over informal relationships in their survey instruments and questions. Informal relationships and unpartnered people need to be studied more, as being unpartnered is increasingly an identity that adults are comfortable with (DePaulo 2006; Klinenberg 2012).

It is possible that HCMST finds less romantic activity among single adults than previous surveys found because unpartnered Americans are truly having fewer dates and less romantic activity than unpartnered American adults used to have. Perhaps unpartnered status may have become more stable in the US. If unpartnered adulthood is less of an intermediate stage between long term relationships, and more of a permanent or semi-permanent stage unto itself (as the low rate of unpartnered adults who have dates in the past year would indicate), then more research is required about what motivates and sustains adults to be unpartnered.

Among heterosexuals who have been dating, the rate of use of the phone apps is higher among women than among men. Heterosexual women's faster adoption of phone dating apps might reflect advantages of security (online compared to offline). The way most phone apps require both parties to express an interest before they can communicate may advantage women, compared to the ordinary face-to-face social interactions when men expect to dominate and monopolize relationship initiatives (Sassler and Miller 2011).

Gay men have made the phone dating apps, especially Grindr, into a core part of their dating and hookup scenes. As Rosenfeld and Thomas (2012) showed, Internet dating in general is more useful to gays and lesbians than to heterosexuals, because gays and lesbians are always in a thin dating market, where potential partners are difficult to identify in face-to-face social interactions.

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Table 1: Dating and meeting partners other than main partner in the last 12 months (for subjects WITH a current partner or spouse)

subject gender	male	male	female	female	male	male	female	female
Partner gender	female	female	male	male	male	male	female	female
married?	no	yes	no	yes	no	yes	no	yes
n	260	1,028	374	976	82	44	61	31
mean relationship duration at HCMST 2017 (years)	6.3	26.2	6.7	26.8	10.6	15.7	6.6	18.2
Percent who met at least one person last year for dating, romance, or sex (beside current partner) in last 12 months	18.6%	3.4%	14.4%	1.6%	24%	21%	30%	3%
Mean number of people met for dating, romance, or sex (beside current partner) in last 12 months	0.9	0.1	0.4	0.04	1.4	2.6	.7	#
Mean number of people met for dating, romance or sex (beside current partner) in last 12 months, if met at least 1 person	4.9	3.2	2.9	2.5	5.9	12.0	2.4	#
Mean number of people met through phone apps for dating, romance or sex (beside current partner) in last 12 months, if met someone in any way	1.0	0.5	1.0	0.3	5.0	8.0	0.4	#
Percentage of all dates that were met through the phone apps	20%	16%	34%	12%	85%	67%	17%	#

Source: HCMST 2017, weighted by weight_combo. Relationships formed in 2016 or 2017 were excluded, so that all current relationships above began in 2015 or earlier, to ensure that current relationships would have been in effect for the 12 months prior to the survey; HCMST 2017 was fielded in July, 2017. There was only one woman with a female married partner who reported meeting anyone but the spouse in the previous 12 months, so those cells have too small a sample to report averages, and have the symbol # instead.

Table 2: Dating and meeting partners in the last 12 month for subjects WITHOUT a current partner

subject gender	men	women	men	women
subject LGB/straight	straight	straight	LGB	LGB
n	177	236	81	44
Percent who met at least one person last year for dating, romance, or sex in last 12 months	18.7%	11.4%	44%	16%
Mean number of people met for dating, romance, or sex in last 12 months	.42	0.55	3.6	0.7
Mean number of people met for dating, romance or sex in last 12 months, if met at least 1 person	2.4	5.1	8.2	4.5
Mean number of people met through phone apps for dating, romance or sex in last 12 months, if met someone in any way	0.2	1.1	2.8	2.7
Percentage of all dates that were met through the phone apps	8%	22%	34%	60%

Source: HCMST 2017, weighted by weight_combo

Table 3: most popular phone dating apps by gender and sexual preference

	straight men	straight women	gay men	lesbian women
Most popular (n)	Tinder (5)	Tinder (3) Bumble (3) Plenty of Fish (3)	Grindr (26)	OKCupid (3) Plenty of Fish (3)
Second most popular (n)	MeetMe (3) OKCupid (3)	Match.com (2)	Tinder (9)	Tagged (2) Tinder (2)
Third most popular (n)	Match.com (2) Plenty of Fish (2)	….	Adam4Adam (5)	….
n of phone app users who met someone through the phone app in the last 12 months	19	18	49	12
n of subjects in HCMST 2017	1,405	1,438	267	284
Proportion of all subjects who were phone app users in the past 12 months	1.4%	1.3%	18.4%	4.2%

Source: Unweighted data from HCMST 2017.

Appendix:

Description of the HCMST 2017 data, unweighted sample size (with weighted row) and [weighted column percentages]

Sexual Identity:

Relationship Status:	Heterosexual	Gay, Lesbian, or Bisexual	Sexual Identity Unknown	Total
Married	1,886 (96.8%) [63.8%]	193 (2.9%) [35.6%]	6 (.4%)	2,085 (100%) [59.9%]
Partnered, but not married	544 (90.0%) [21.0%]	233 (10.0%) [43.7%]	0	777 (100%) [21.2%]
Unpartnered, but has had a partner in the past	413 (92.5%) [15.2%]	125 (6.7%) [20.7%]	3 (0.8%)	541 (100%) [14.9%]
Never had a partner	0	0	107	107 [4.0%]
Total	2,843 (90.9%) [100%]	551 (4.9%) [100%]	116 (4.3%)	3,510 (100%) [100%]