

Searching for a Mate: The Rise of the Internet as a Social Intermediary

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Abstract

This paper explores how the efficiency of Internet search is changing the way Americans find romantic partners. We use a new data source, the How Couples Meet and Stay Together survey. Results show that family and grade school have been steadily declining in their influence over the dating market for 60 years. In the past 15 years, the rise of the Internet has partly displaced not only family and school, but also neighborhood, friends and the workplace as venues for meeting partners. The Internet increasingly allows Americans to meet and form relationships with perfect strangers, i.e. people with whom they had no previous social tie. Individuals who face a thin market for potential partners, such as gays, lesbians, and middle aged heterosexuals, are especially likely to meet partners online. One result of the increasing importance of the Internet in meeting partners is that adults with Internet access at home are substantially more likely to have partners, even after controlling for other factors. Partnership rate has increased during the Internet era (consistent with Internet efficiency of search) for same-sex couples, but the heterosexual partnership rate has been flat.

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Introduction:

One under- appreciated problem in the scholarly understanding of mate selection is the problem of *search*. Simply, how do people actually find mates and romantic partners? There are many millions of adults in the United States who are single, and presumably seeking a romantic partner. Of these millions of single adults, any one adult can only ever personally know some small number, a tiny fraction of the pool of available single persons. Even in a local neighborhood, most potential mates would be unknown to any individual unless the population density of the neighborhood was very low.

In the classic economic and game theoretic models of partner matching and mate selection (Becker 1991; Gale and Shapley 1962), the relative value of every potential mate is assumed to be already known, or can easily be determined (Todd and Miller 1999).¹ The actual way Americans search for and find romantic partners has been shrouded in mystery because of a lack of appropriate data. Recent studies on how couples meet have been done in France and Holland (Bozon and Heran 1989; Kalmijn and Flap 2001), but these studies use data that predates the Internet era. American scholarship on how couples meet has been dormant since mid-century studies using marriage records found that a high percentage of urban marriage licenses were given to couples who lived in the same neighborhood of the city (Kennedy 1943; Bossard 1932).

¹ Gale and Shapley originally imagined mate search as analogous to applying to college. The weakness of the analogy is that the set of American colleges is relatively small and stable, and information about most colleges was fairly easy to find even in the days before the Internet. Unlike the set of colleges, the set of potential mates is large, membership in the set is regularly changing, and information about the great majority of potential mates cannot easily be gathered.

In this paper we exploit unique features of a new nationally representative dataset to analyze not only how Americans meet their romantic partners (which has been studied in the past), but also how the patterns of meeting have changed over time, which has never been previously studied. The first wave How Couples Meet and Stay Together survey fielded in 2009 (HCMST, see Rosenfeld and Thomas 2010) has a longitudinal component and also replicates the wording of relevant questions from the 1992 National Health and Social Life Survey (see Laumann et al. 1994). We use the forward and backward comparisons to supplement a retrospective history of how Americans met their partners. HCMST included open-ended and closed-ended questions about how respondents met their current partner, which together allow a more accurate picture of how couples met than has previously been available. Because HCMST postdated the Internet revolution by more than a decade, the data offer a unique opportunity to assess the impact of the Internet on the way Americans meet their romantic partners.

The fact that Americans use the Internet to meet romantic partners has been documented before (Madden and Lenhart 2006; Sautter, Tippett and Morgan 2010), and is not in itself surprising. The Internet has become almost ubiquitous for most Americans. We go beyond previous analyses to explain which subgroups of Americans are more likely to meet their partners online, and why. Specifically, we show that gays, lesbians, and middle aged heterosexuals- three groups who inhabit thin markets for romantic partners- are particularly likely to have found their partners online. Individuals are in a *thin market* for potential partners when the cost of identifying multiple potential partners who meet minimum criteria may be large enough to present a barrier to relationship formation. We propose that for single adults in thin dating markets, improvements in the efficiency of Internet search may be especially useful and important. Conversely, single people (college students, for example) who are fortunate enough to

inhabit an environment full of eligible potential partners may not need to actively search for partners at all.

The Social Impact of the Internet

The Internet as we know it today originated in a U.S. Defense Department initiative called ARPANET in the 1970s (Castells 2000). Over time, people have adapted the Internet to social uses, in much the same way that people adapted the telephone to social uses. The telephone companies initially meant for the telephone to be a tool for business, and early on tried to discourage longer social telephone calls because social telephone calls were causing congestion in the telephone network (Fischer 1994; Katz 1997). Fischer's (1994) study of the telephone suggested that land-line telephone users primarily called people they already knew, which is to say that the telephone helped individuals stay in touch with their pre-existing social network, but the telephone did not, of its own accord, help people expand their social networks. Building on the scholarship of the telephone's social impact, some influential scholars have suggested that computer mediated communication (CMC) would primarily reinforce already existing social patterns (Castells 2000 p.393; Putnam 2000 p.169).

While it is true that the Internet has made communications within existing social networks more efficient (as the telephone also did), the Internet also has dramatically improved the efficiency of searching for and finding new people outside of one's pre-existing social network, which the telephone never did. One could think of the phone book as a search tool associated with the telephone. If one were looking for a local plumber, the Yellow Pages were helpful. If one were looking for a business or person who did not fit in to the predefined categories of the phone book, then the phone book was no help at all. The problem of rigid pre-

selected categories was a limitation of all searches in the pre-Internet era (Anderson 2006).

Modern Internet search accesses data that can be sorted and searched by user-defined rather than pre-defined categories, making search for anything uncommon dramatically more efficient.

At the time of the introduction of the Netscape and the Internet Explorer browsers in late 1994 and early 1995, respectively, hardly any U.S. households had internet access. By 2009, about 67% of American households had Internet access (U.S. National Telecommunications and Information Administration 2010). The rapid adoption of Internet technologies has led to much debate about the social impacts of the new technologies. Because the Internet technologies are so varied, and the social uses of the Internet are still evolving, it is too early to say what all the social impacts of the Internet will be (Katz and Rice 2002). The social impacts of even specific and narrow technologies are notoriously difficult to identify (Fischer 1985). It is difficult to find any technology that has not been alleged to have had substantial social impacts. Much has been made of the social impacts of not only the light bulb (Yzer and Southwell 2008) but also more prosaic technologies such as the washing machine (Lynd and Lynd 1929 p.174) and the fax machine (Light 2006).

Some early studies of Internet use suggested that time one spent online reduced face-to-face social interactions (Nie and Hillygus 2002) or increased rates of depression and isolation (Kraut et al. 1998). The early findings of negative social impacts of time spent online have been either overturned (Kraut et al. 2002) or broadly challenged (Katz and Rice 2002; Wang and Wellman 2010).

Scholarly debate about the social impacts of the Internet has been hampered by a lack of nationally representative data on how (or whether) people use the Internet to meet new friends or partners. In this context we mean friends or partners whose relationships exist in the physical

rather than solely in the virtual world. While we acknowledge Putnam's argument (2000 p.170) that face-to-face relationships have important advantages over 'virtual' relationships, we also demonstrate that relationships can start in the virtual world and be transplanted to the 'real' or face-to-face world, a phenomenon that has previously been demonstrated primarily with convenience samples of individuals who are active online (Parks and Roberts 1998; Kendall 2002; but see also Madden and Lenhart 2006).

In studying whether Internet access helped unemployed Americans find jobs, Fountain (2005) found that Internet access was only an advantage in the early Internet era, before 2000 (see also Kuhn and Skuterud 2004). Fountain explained her negative findings for the benefits of Internet search by arguing that Internet job listings produced too many applications from unknown applicants for companies to properly screen, so that the supposed efficiency of Internet search was largely wasted. Fountain argued that the process of finding a job in the Internet era was similar to the way the job search process worked before the Internet: people found jobs through personal connections (Granovetter 1974).

If the Internet has failed to transform the market for matching jobs to job applicants, that would be consistent with the broader consensus that the Internet complements, rather than displaces existing patterns of behavior (DiMaggio et al. 2001). Our analysis of how Americans meet their partners is based on more detailed data on the matching process (coded first person stories combined with closed-ended questions) than has previously been available. The more detailed data allows us to document how the Internet does appear to be displacing, to a certain extent, the more traditional ways of meeting partners such as through friends, through family, in school, or in the neighborhood. Furthermore, the types of relationships formed online differ

somewhat from relationships formed offline, meaning that the rise of the Internet may have some effect on the pattern of who mates with whom.

The Internet, Neighborhood, and Race

Observers of Internet trends have long noted the way in which the Internet transcends some of the limitations of physical space (Wellman 2001; Anderson 2006).² Geographic proximity stills matters in online dating to the extent that a face-to-face relationship is the goal, but online searches for local romantic partners generally have a greater geographic radius than the small radius of walkability which defines neighborhood. In the U.S. before World War II, mate selection was dominated by family, and by the pool of potential mates available in the neighborhood, the church, and the primary or secondary school (see Figure 1, below). The predominant influence of family and neighborhood over mate selection in the past is one reason scholars have argued that there were so few interracial unions and so few same-sex unions in the past (Rosenfeld 2007), but the earlier scholarship was limited to indirect measures of family influence. We measure family's direct influence over mate selection outcomes in the US for the first time.

The rise of individual search and choice in Internet dating does not imply that all forms of segregation (previously promoted by family and by neighborhood geography) in the mating markets will disappear. The Internet has forms of racial segregation of its own (Hargittai 2008), and we know from the literature on online dating that preferences exist for mates and partners that share the respondent's race and religion (Hitch, Hortaçsu and Ariely 2010; Robnett and Feliciano 2011). Furthermore, the great variety of political vantage points and cultures available

² Castells (2000) has noted that, paradoxically, the great centers of Internet technology are highly geographically concentrated in areas such as Silicon Valley, California, because the face-to-face networks are crucial for the cross fertilization of ideas.

online allows people to find voices that most closely mimic their own (Adamic and Glance 2005), which can serve to reinforce biases and create cyberbalkanization.

Hypotheses:

We begin with an observation about a fundamental aspect of the Internet:

Axiom: Internet search for romantic partners is potentially more efficient than pre-Internet search.

Searching the personal advertisements in the pre-Internet era meant thumbing through the newspaper classified section by hand. Print advertisements could only be examined one issue at a time. Perhaps that is why only 4 out of 3,009 couples in the dataset reported meeting through the newspaper classifieds (even though a majority of the sample met before the Internet era). In contrast to the inefficiencies of searching paper documents, online search makes the archive of old issues just as accessible as the current issue. Online, it is as easy to search across a million records as to search across a hundred records.

The rise of the Internet and the potential efficiency of the Internet for partner search should lead to a rise in Americans meeting their partners online, therefore:

Hypothesis 1: In the Internet era (i.e. post 1995), a steadily increasing percentage of Americans shall have met their partners online.

If more and more Americans are meeting online, it could be the case that fewer and fewer Americans are meeting in the traditional ways (through family, through friends, through church, in the neighborhood), but the rise of the Internet need not necessarily be associated with the

decline of traditional ways of meeting. The Internet could be a complement to traditional ways of meeting; friends can and do meet the friends of their friends through Facebook, for instance. If, on the other hand, the Internet partly displaces traditional ways of meeting, then we would expect to see all the traditional ways of meeting decline during the Internet era, therefore:

Hypothesis 2: In the Internet era, all the traditional ways of meeting romantic partners will have declined because of displacement by the Internet.

Displacement of traditional ways of meeting by the Internet can only occur to the extent that the Internet reduces the necessity or the primacy of third person intermediation in the dating market, therefore:

Corollary 2a: In the Internet era, more Americans will meet their partners without the active brokerage of third persons.

If the way Americans meet their romantic partners is changing, it is important to establish how different meeting venues might affect the outcome of the mate selection process. Prior scholarship on the relationship between couples and their families of origin has argued that the family as an institution promotes heterosexual marriage with partners of the same race, religion, and social class, therefore:

Hypothesis 3: Respondents who meet their partners through family are more likely to be heterosexual couples and more likely to have the same race, religion, and social class as their partner.

Conversely, scholars of the Internet who take a positive or even a utopian view of the Internet's social influence have argued that the Internet would make ascriptive personal characteristics such as race, and family background characteristics such as religion and social class less important (Barlow 1996), therefore:

Hypothesis 4: Respondents who meet their partners online are more likely to have partners of different race, religion, or social class origin.

If the efficiency of search is the main advantage of finding partners online, then we should expect to find that individuals who are looking for a type of partner that is harder to find will be most likely find that partner online, therefore:

Hypothesis 5: The efficiencies of Internet search for romantic partners should be especially important to individuals who are in a thin market for romantic partners.

An analogy to Hypothesis 4 is what Anderson (2006) refers to as the “long tail” of Internet marketing. Brick and mortar stores only have room for the most popular items, which is why esoteric items were difficult to find in the pre-Internet era. In the Internet era it became as easy to find information about low-selling esoteric items as about popular items, and as a result of the Internet, esoteric and niche items more readily found their markets.

If Internet search has indeed increased the efficiency for romantic partner search, we would expect to find Americans with Internet access at home would be more likely to have a romantic partner.

Hypothesis 6: The partnership rate will be higher for individuals who have Internet access at home, all else being equal.

Finally, as Internet access becomes more prevalent in American households, the partnership rate for Americans should increase. That is, Internet access should lead to greater overall efficiency in the dating market, and greater efficiency in the dating market should lead to more matches being made, and fewer people remaining single, therefore:

Hypothesis 7: The Internet era will increase partnership rates and reduce the unmatched proportion of the adult population.

Hypothesis 7 is necessarily a speculative hypothesis, because the adult partnership rate is a function of many social, cultural, and demographic factors besides Internet search efficiency. Even though changes in the societal partnership rate cannot be causally linked to the Internet, it is worth examining whether the partnership rate has changed during the Internet era in the way Hypothesis 7 predicts.

Data

This paper uses data from waves I and II of the “How Couples Meet and Stay Together” (HCMST) survey (Rosenfeld and Thomas 2010). HCMST is a nationally representative longitudinal survey of 4,002 English literate adults, of whom 3,009 had a spouse or romantic partner. Data, codebooks, frequencies and documentation are publicly available at <http://data.stanford.edu/hcmst>. HCMST has new and better data on how Americans met their romantic partners, and also replicates relevant questions from the 1992 National Health and Social Life Survey (Laumann et al. 1994).

The HCMST survey is an Internet survey, implemented by Knowledge Networks (KN). Unlike most Internet surveys whose participants are composed of a self-selected or opt-in sample of volunteers, the KN panel participants were initially recruited into the panel through a

nationally representative random digit dialing (RDD) telephone survey, so the KN sample is nationally representative. Respondents with Internet access at home used their own computer to answer the surveys. Respondents who did not have Internet access at home were offered Internet access and a WebTV in exchange for participating regularly in surveys. The quality of data derived from representative Internet surveys such as the KN panel has been shown to equal or exceed the quality of data derived from the previous industry standard RDD surveys (Fricker et al. 2005; Baker et al. 2010 p.743; Chang and Krosnick 2009).

Seventy one percent of KN panelists contacted for the HCMST survey consented to participate. Including the initial RDD phone contact and agreement to join the panel (participation rate 32.6%), and the respondents' completion of the initial demographic survey (56.8% completion), the composite overall response rate is a much lower $.326 * .568 * .71 = 13\%$ (Callegaro and DiSogra 2008). The very substantial issue of attrition bias can be controlled, however, because KN gathers information from subjects at each survey stage (Couper 2000). Among the 3,009 partnered respondents who participated in HCMST wave I, 2,520 or 84% completed the first follow-up survey one year later. The follow-up survey was brief, and was mainly used to ascertain whether the couples identified in wave I were still together.

Respondents who previously had answered "yes" to the question "Are you yourself gay, lesbian, or bisexual?" were oversampled for the HCMST survey. Of the 3,009 partnered adults in the survey, 474 had a same-sex partner.

"How did you meet" is a simple sounding question that turns out to be quite difficult because of the ambiguity of 'how' with respect to where, when, and with whom. In in-depth interviews that preceded the main survey, we discovered that people have stories, usually well rehearsed and oft-repeated, about how they met their spouse or partner, but may not be able to

pigeon hole those stories into pre-defined categories. In addition, the number of possible venues where couples meet, and the types of different intermediaries are too numerous for a closed ended question to effectively cover all the possibilities. For this reason HCMST gathered the stories of how respondents met their spouse or partner in an open ended text box (average response length was 342 characters), as well as respondent answers to closed-ended questions. The data from different kinds of overlapping questions allows for inconsistent responses to be corrected in the analysis.

[Table 1 here]

The Results

Table 1 shows weighted summary statistics for the HCMST survey wave I, by couple type. Compared to the American Community Survey (ACS) of 2008 (Ruggles et al. 2010), the HCMST has higher rates of interraciality (7.2% for married heterosexuals compared to 3.6% in the ACS). The higher rate of interraciality in HCMST is mainly due to the fact that the HCMST survey was offered only in English, whereas the ACS was offered in a variety of languages. Asians and Hispanics are the two groups that contribute most to racial and ethnic intermarriage in the US (Qian and Lichter 2007). Among Asians and Hispanics in the U.S., the English speakers have higher rates of intermarriage with non-Hispanic whites.³

[Figure 1 here]

³ Although there are only 16 black-white marriages among non-Hispanics in HCMST, those 16 cases are approximately what we would expect to find. According to the 2008 ACS, the US had 334,000 black men married to white women, and 154,000 black women married to white men (all non-Hispanic). According to HCMST, there were 403,000 (11 unweighted) black men married to white women, and 187,000 (5 unweighted) black women married to white men in the US in 2009.

How Heterosexual Couples Meet

Figure 1 shows the changing pattern, smoothed by local lowess regressions (Cleveland 1979), of how heterosexual and same-sex couples have met over time in the US. The data in Figure 1 are relationships that were in place during the 2009 HCMST survey, which could be subject to a variety of biases. We document below the potential biases that we can measure, and their seemingly modest effects. HCMST recorded information only about each respondent's current relationship in 2009, because in-depth interviews that supplemented HCMST demonstrated that much more reliable information could be obtained about current relationships than about past relationships.

Because heterosexual (male-female) couples comprise 98% of all couples in the US (and an even higher percentage in the past), we begin our discussion with the heterosexual couples. For most of the late 20th century, meeting through friends was the most common way heterosexual respondents met their partners. The percentage of heterosexual couples whose first meeting was brokered by friends rose from about 21% in 1940 to almost 40% in 1990, before going into decline and dipping below 30% for the most recently formed couples. The pattern of heterosexual couples meeting through or as coworkers is similar to the pattern of meeting through friends (though coworkers have always been less influential than friends), with a steady rise from 1940 and a peak around 1990 (at about 20%), followed by a steep decline after 1990.

According to Figure 1, several of the most traditional ways of meeting heterosexual partners had monotonic declines from 1940 to 2009. Meeting through family was actually the most common way that elderly respondents who met almost 70 years prior to the survey in 2009 recalled meeting (though the sample size of couples who met prior to 1950 is only 66). By the

early 1940s family had already been overtaken by friends as the primary way male-female couples met. The steady decline of family as a broker in relationship formation in the US has continued over 7 decades, declining from 25% of all heterosexual couples who met in 1940 to less than 10% of heterosexual couples who first met in 2007-2009. The decline of family of origin as a relationship broker in the late 20th century U.S. is consistent with the reported decline of parental control over young adults for the same historical period (Rosenfeld 2007). Along with the steady decline of family of origin as a relationship broker, primary and secondary school declined monotonically as a first meeting place for couples that eventually become romantically involved, from 21% of relationships around 1940 to less than 5% most recently.

As family and grade school have become less influential in the mate selection process of heterosexuals in the U.S., so too have residential neighborhoods and the church declined as well in their influence over the market for romantic partners. The declines of neighborhood and church are not as monotonic as the declines for family and grade school. From about 1960 to 1990, Figure 1 shows that neighborhood and church had a roughly steady influence over how heterosexual couples met, with about 10% of heterosexual couples meeting as neighbors and about 7% meeting in or through houses of worship. After 2000, neighborhood and church went in to steep decline along with most of the other traditional ways of meeting romantic partners. The post-1995 declines visible in Figure 1 for heterosexual couples in meeting through friends, meeting through coworkers, meeting through family, meeting in school, meeting in the neighborhood, and meeting in or through church are all statistically significant declines.

Meeting in college was rare in 1940, because few Americans went to college. In the 1940-2000 period, the percentage of heterosexual couples who met in college rose steadily from 5% to about 11%. As the influence of primary and secondary school has been declining

precipitously for heterosexuals during the entire period, college (the “college” category in Figure 1 includes college, graduate, and professional school) crossed paths with and overtook primary and secondary school in the early 1990s. Given reports of rising educational endogamy (Schwartz and Mare 2005; but see also Rosenfeld 2008) one might expect to see the percentage of Americans who meet in college to rise monotonically, but even the influence of college flattens out and appears to decline slightly after 2000.

The Internet is the one social arena that is unambiguously gaining in importance over time as a place heterosexual couples meet.⁴ For couples who met in 1990 and before, the percentage who met online was essentially zero.⁵ Between 1995 and 2005, there was exponential growth in the proportion of respondents who met their partners online, reaching what appears to be a plateau at approximately 22%. For heterosexual couples who met in 2009, the Internet was the third most likely way of meeting,⁶ after the intermediation of friends, and approximately tied with the bars, restaurants and other public places.⁷ With the rise of the Internet as a way couples meet in the past few years, and the concomitant recent decline in the central role of friends, it is possible that the Internet could eventually eclipse friends as the most influential way Americans meet their romantic partners. Our Hypothesis 1 predicted a sharp rise in the percentage of

⁴ Might the KN survey, because it is an online survey, over-estimate the Internet’s role in finding a partner? The answer is possibly yes, but probably not by very much. We estimate a lower bound for the percentage of Americans who met their partners online by assuming that individuals without Internet access at home when they joined the KN panel would not have used the Internet to meet their partner. These values (appendix tables available from the authors) are lower, but only modestly lower, because the individuals who had their own Internet access were much more likely to find partners online. For instance, for respondents who met their partner in the last two years, the percentage who met online is reduced from 21.5% to 17.3% (for heterosexual couples) and from 61% to 54% (for same-sex couples).

⁵ Figure 1 shows a small bump in the percentage of heterosexual couples who met online in the early 1980s. This bump corresponds to two respondents. These two respondents first met their partners in the 1980s without the assistance of the Internet, and then used the Internet to reconnect later.

⁶ Match.com's study, (Chadwick Martin Bailey 2010), estimate that 17% of U.S. couples married in the last 3 years met through an online dating website. eHarmony's study, by Harris Interactive (2009), estimates that 18.52% of new marriages in 2008-09 met online.

⁷ Most of the increase in bars and restaurants and other public entertainment places is secondary to the growth of the Internet; as couples who first meet online need a safe place to have a first face-to-face meeting.

couples who met online, and Hypothesis 2 predicted an Internet era decline in the traditional ways of meeting; both predictions find support in Figure 1.

It is important to note that the categories in Figure 1 are not mutually exclusive. Every relevant category was coded from the respondents' stories. If the Internet were merely reinforcing existing ways of finding partners, we would expect to find the Internet rising but we would expect other previously stable ways of meeting (through friends, in college, in the workplace) to remain unchanged. The fact that nearly all other ways of meeting have been in decline during the Internet era suggests that the Internet is displacing rather than simply complementing the traditional ways of meeting a partner.

Ninety-six percent of the couples in HCMST are either married or are unmarried couples with intimate physical relationships. The relationships, in other words, are not virtual or online-only relationships. By meeting online, or meeting through the Internet, we mean that the couple's relationship began with an online interaction, and then developed into a personal and physical relationship. Couples were coded as having met online only if the online interaction was crucial to their having met, regardless of how the couple communicated once they had met. Online meetings include meeting through web dating sites, through Internet classifieds, through online chat, while playing Internet games, and through social networking websites. If the couple had first met decades earlier, fell out of touch, then rediscovered each other through Facebook, that would be "meeting online" for our purposes. Many couples who first meet and develop their relationship offline also communicate online, and those couples are *not* counted as meeting through the Internet. For instance, if a friend provides the respondent with the email address of a potential partner, that would be "meeting through a friend" but not "meeting online," because the partner was not first found online (and the friend could just as easily have provided a phone

number). If the friend was searching a dating website, and discovered the partner's profile there, and emailed the profile to the respondent, then the respondent and partner would be coded as "meeting through a friend" and "meeting online," because the friend first located the partner online. Some of the online meetings are brokered by friends, but most couples who meet online, as we show below, are the result of one-to-one interactions without the active brokerage of any third person.

How Same-Sex Couples Meet

The right panel in Figure 1 shows the changing way same-sex couples have met in the U.S., from 1985 to present. Whereas the left panel of Figure 1 (for heterosexual couples) extends back to 1940, the figure for same-sex couples extends only back to 1985 because there are only one fifth as many same-sex couples as heterosexual couples in the dataset, and therefore we know less about the past of how same-sex couples met. If we extended the figure for same-sex couples further into the past, where the data is admittedly sparse, we would find that bars and restaurants seemed to be the leading way same-sex couples met in the early 1970s and before. Meeting in bars, restaurants and other public places was always significantly more common for gay men than for lesbians; 26.7% of the gay men in HCMST met their male partner at a bar or restaurant, compared to only 11.4% of lesbians who met their partner in a bar or restaurant. Because the gender gap is small and insignificant for most ways of meeting, we combine respondents by gender in Figure 1, and report the few gender differences in a separate table (available from the authors).

The most striking difference between the way same-sex couples meet and the way heterosexual couples meet is the dominance of the Internet among same-sex couples who met

after 2000, with more than 60% of same-sex couples meeting online in 2008 and 2009. Meeting online has not only become the predominant way that same-sex couples in the U.S. meet, but meeting online is now dramatically more common among same-sex couples than any way of meeting has ever been for heterosexual or same-sex couples in the past. To an even greater extent than for heterosexual couples, the Internet seems to be displacing all other ways of meeting for same-sex couples.

The rise of the Internet as a virtual community with its own rules (Correll 1995), outside of traditional family supervision and the historical constraints of geographic propinquity (Wellman 2001) constitutes a special benefit for certain individuals. The efficiencies of Internet searching are especially important for individuals searching for something uncommon. Same-sex couples make up less than 2% of all couples in the US, and outside the big cities the percentage would be substantially lower (Gates and Ost 2004); gays and lesbians are nearly always in thin dating markets. The especially high rate at which same-sex couples meet online supports our Hypothesis 5, that people in thin dating markets should be especially likely to meet online.

In addition to being dramatically more likely to meet online, same-sex couples have always been dramatically less likely than heterosexual couples to meet through family, or to find their partners in primary or secondary school. The number of same-sex couples who meet through family or through primary or secondary school has never been as high as 5%, whereas 17% of heterosexual couples met through family in 1985, and as many as 25% of heterosexual couples met through family in the 1940s. Social and geographic distance from the family of origin has long been theorized as one of the fundamental factors in same-sex couple formation (Bérubé 1990; Weston 1991).

[Table 2 here]

Assessing the Possibility of Couple Dissolution Bias:

If couples that meet through family connections (or through the neighborhood, or in the office) stay together longer, that could partly explain the apparent decline over time in traditional ways of meeting for heterosexual couples. One way to assess whether couples who have met in traditional ways are likely to have longer couple longevity is to examine whether the respondent's reported relationship quality varies by how they met their partners. Table 2 shows that the weighted relationship quality for all couples does not seem to depend much on how the couple met. The average relationship quality (on a scale of 1-5 with 5 being "excellent" and 1 being "very poor") is 4.47 for all couples (with a standard deviation of 0.75). Couples who met through family connections have a slightly lower than average reported mean relationship quality of 4.40. Couples who met online have a mean relationship quality of 4.48, which is indistinguishable from the overall average of 4.47. Couples who met in primary or secondary school, or in church, are the only groups whose relationship quality is significantly higher than average after regressions have controlled for the demographic profiles of couples.

The last column of Table 2 shows the effect of each way of meeting on relationship quality, while controlling for relationship duration, race, coresidence, and parental approval via a series of multivariate regressions. With or without controls, there is only a modest correlation between self-reported relationship quality and how couples met, which is evidence against a dissolution bias explanation of Figure 1.

[Table 3 Here]

Table 3 shows that weighted breakup rates (i.e. whether the couple identified in wave I was still together at wave II, a year later), are not strongly influenced by how couples met. Consistent with their slightly above average relationship quality described in Table 2, the one-year breakup rate for couples who met online was slightly below average, compared to other couples who met during the 2000-2009 period. Couples that had been together longer, especially couples who were married and coresident, were much less likely to break up in the one year interval between wave I and wave II, which is why the couple breakup rate for couples who met in 2000-2009 is substantially higher than the couple breakup rate for couples who had been together longer. In Table 3 the raw odds ratios are a function of the weighted breakup rates directly, and the adjusted odds ratios are each derived from separate logistic regressions controlling for marital status at wave I, coresidence at wave I, respondent race, respondent religion, the presence of children in the respondent's household at wave I, and length of respondent's relationship with their partner.

According to Table 3, couples who met through friends had slightly higher than average breakup rates (9.6% broken up after one year, compared to 8.1% for couples who did not meet through friends). The greater breakup rate of couples who met through friends becomes statistically significant when potential confounding factors are controlled for.

As was the case with relationship quality, most of the differences in couple dissolution rates described in Table 3 are not consistent with a couple dissolution bias explanation of changing ways Americans meet their partners shown in Figure One. Only the last two categories, i.e. met in primary or secondary school, and met in church, have substantially lower couple dissolution rates that could partly explain their greater prevalence among heterosexual couples

who met further in the past in Figure One. Though the differences in one year breakup rates are mostly small and insignificant, even a small difference in the annual break-up rate could create substantial differences over decades.

[Table 4 Here]

Table 4 presents a further effort to assess whether the way couples meet has changed over time. Table 4 compares weighted nationally representative data from question 33 of wave I of the 2009 HCMST to the results from an identically worded question (also weighted and nationally representative) from the 1992 National Health and Social Life Survey (NHSLs). Column 1 presents NHSLs data on how respondents met their current or most recent cohabiting partners as of 1992, and column 2 presents HCMST data for couples that were living together in 1992, i.e. living together for at least 17 years prior to the 2009 HCMST survey. The 1992 NHSLs had subjects aged 18-59, so column 2 includes only subjects from the 2009 HCMST who were age 18-59 in 1992. Except for the “met through friends” category (33.1% among long term HCMST cohabiters, compared to 40.3% in the NHSLs), columns 1 and 2 are reasonably close to each other, which is what we would expect to find if couple longevity was not much effected by how couples meet. The similarity of columns 1 and 2 (despite the additional 17 years of couple duration in HCMST), and the increasing gap between the NHSLs in column 1 and the more recently formed couples in HCMST columns 3 and 4 (especially the decline in meeting through family or through classmates, and the rise in self introduction) reinforces the period explanation we have offered for Figure 1.

Tables 3 suggested that couples who meet through friends have an especially high breakup rate, which is consistent with Table 4's finding that HCMST underestimates the percentage of couples who met through friends in the past. If HCMST does underestimate "meeting through friends" in the past, then the real decline over time in the role of friends in the dating market may be even steeper than the decline shown in Figure 1.

The rise in self-introduction, from 31.7% in the 1992 NHLS, to 36% in the 2009 HCMST, to 43.1% for HCMST couples who met after 1999 is consistent both with a decline in the intermediation of others such as family, and also consistent with the rise of the Internet, which favors self-introduction. We predicted in Corollary 2a that the Internet era would be accompanied by an increase in the percentage of Americans who meet without the active brokerage of third persons; Table 4 supports this corollary.

[Table 5 here]

The Association between Meeting Venue and Mate Selection Outcomes

The literature on mate selection has always assumed, without direct evidence, that the context of how couples meet was an important determinant of what kinds of couples would exist. Hypothesis 3, based on prior literature, predicted that the intermediation of families would be associated with more traditional types of couples. Figure 1 already demonstrated that same-sex couples were substantially less likely to meet through family intermediation. Table 5 shows that 18.2% of all heterosexual couples in the U.S. met at least in part through the intermediation of some member of the respondent's family or their partner's family, compared to only 3.5% of same-sex couples who met through family intermediation. The odds ratio for the difference in

meeting through family is 0.16, meaning the odds of having met through family are about one sixth as high for same-sex couples as for heterosexual couples, and the odds ratio remains significantly less than one after respondent age and couple longevity are controlled for.

As the literature and Hypothesis 3 predicted, interracial and interreligious couples are also both less likely to have met through family intermediation, though family suppresses interracial and interreligious unions less dramatically than family suppresses same-sex unions. For interracial couples, the odds of having met through family were 0.56 times as high as for same-race couples, and for interreligious couples (most of whom are unions of persons raised as Protestants with partners raised as Catholics) the odds of meeting through family were 0.77 times as high as for couples in which both partners were raised in the same religion. The family's negative effect on interreligious and interracial couple formation remains significant after respondent age and couple longevity are controlled for.

Meeting through family connections is associated with a particularly traditional type of couple formation, specifically couples that are heterosexual, and couples that are uniform by race and religion, but Table 5 shows that meeting through family is *not* significantly associated with class homophily for romantic couples. Neither the couple's educational gap nor the educational gap of their mothers, nor the age gap between partners is significantly lower for couples who met through family.

Whereas the family is an institution that promotes the formation of traditional types of unions, couples who meet online tend to be less traditional in several important respects. First, as we have already shown, meeting online is much more common among same-sex couples than among heterosexual couples, and Table 5 shows that the higher rate of online meeting for same-sex couples (41% of same-sex couples formed in the past 10 years met online compared to 17%

of heterosexual couples) remains significant after controlling for Internet access at home, respondent age, and couple longevity. Interreligious couples were more likely to have met online (22% compared to 15% of same-religion couples), and the odds ratio for this comparison remained greater than 1 even after background variables were controlled for, supporting Hypothesis 3 (that the Internet would be associated with the formation of more non-traditional couples).

According to Table 5, interracial couples are slightly less likely than same-race couples to have met online (16% compared to 19%), but the difference is not statistically significant. The fact that online meeting is not more common for interracial couples is somewhat surprising, and is contrary to our Hypothesis 4. One reason that early and more utopian scholarship on the effects of the Internet argued that online participation might undermine the importance of race or other ascriptive characteristics (Barlow 1996; Katz and Rice 2002 p.12) was that early Internet social networking was text rather than browser based (Kendall 2002). In text-only interactions, the race, gender, and background characteristics of interlocutors are difficult to discern, but in a web dating environment wherein users are expected to post photographs of themselves, race and gender (though not necessarily religion) are highly visible. Of the 280 HCMST respondents who met their partners online, only 18 met their partner through online gaming, where the race of participants is obscured. The majority of HCMST couples who met online met through online dating websites, where the race of participants is either stated or can be inferred from their portrait photograph.

[Figure 2 Here]

Age and Meeting Online for Heterosexuals

We predicted in Hypothesis 5 that individuals in thin dating markets would find the greater efficiency of Internet search to be especially important. Single heterosexuals in their 30s and 40s face a thin dating market, because most people in their 30s and 40s are already partnered. Figure 2 shows that for heterosexual men and women, the partnership rate peaks for respondents in their late 30s. For heterosexuals in their late 30s, the partnership rate is higher than 80%, meaning that fewer than 20% of individuals are single.

Even though comfort with technology might be expected to be greatest among the most recent birth cohorts, the youngest respondents were *not* the most likely to meet their partners online. For heterosexual men the shape of the age dependency of meeting online is similar to the shape of the age dependency of the partnership rate for women (see the left side of Figure 2), with a somewhat later peak.

The heterosexual male partnership rate also peaks for men in their late 30s, but unlike the female partnership rate, the male partnership rate remains high (around 80%) as men age (see the upper right quadrant of Figure 2). The rate of Internet use for meeting partners peaks for women in their early 40s, and then declines. Women's rate of using the Internet to meet men, roughly parallels men's partnership rate up to about age 50, when women's use of the Internet to meet men declines, but the men's partnership rate remains high. One reason that older women are less likely to meet partners online is that older women are much less likely than older men to have Internet access at home: in HCMST 37% of men in their 60s had Internet access at home compared to 21% of women; 40% of men in their 70s had Internet access at home compared to 21% of women. Among older Americans, the digital divide has a strong gender component (Katz

and Rice 2002 p.63), which may be one constraint on the ability of older women (who are in a thin dating market) to find partners.

To what extent is the partnership rate of heterosexual women of a certain age a reasonable measure of the lack of availability of partners for single men of the same age group (and vice-versa)? Despite the existence of age discrepant couples, age homophily is the dominant pattern among couples. Among heterosexual couples in the U.S. (according to weighted data from HCMST), the median absolute value age gap is 3 years, the 75th percentile age gap is 6 years, and the 90th percentile age gap is 10 years. Most couples are similar in age, and most individuals prefer potential partners with age similar to their own (Hitch, Hortaçsu and Ariely 2010), though men's preference for women younger than themselves has been reported to increase for men who marry later in life (England and McClintock 2009). Furthermore, meeting online is not associated with more age discrepancy between partners, see Table 5 above.

The way that the age-specific Internet meeting rate parallels the age-specific partnership rate for heterosexuals (with the exception of older women's Internet use) supports Hypothesis 5 which predicted that the search efficiency of the Internet would be especially useful to individuals in thin dating markets. Heterosexual men are significantly more likely to have met their partner online when women in the same age group are especially unavailable (regression results available from the authors), and the same is true for women meeting men online as a function of men's relative unavailability, even after controlling for couple longevity, Internet access at home, race, and education. Other subgroups who can be presumed to be in thin dating markets (for example religious minorities such as Jews, sexual minorities such as gays and lesbians in the South or in rural areas) are not present in the HCMST in sufficient numbers to allow for additional tests of Hypothesis 5.

The age-specific Internet meeting pattern for same-sex couples is quite different (not shown in Figure 2) from the pattern for heterosexual couples, in part because gays and lesbians are *always* in a thin dating market, regardless of age. Previous literature has shown that online dating is especially common among gays, lesbians, and middle-aged heterosexuals (Lever et al. 2008).⁸

[Table 6 here]

Meeting Online and Prior Social Connections:

One of the key questions relating to the Internet as a social intermediary is whether the Internet fosters new social connections between people who otherwise would have been strangers, or whether the Internet is simply a medium for more efficient communication between individuals who already know each other (Putnam 2000; boyd and Ellison 2008). The HCMST data are especially well suited to analysis of this question because the HCMST main survey included not only multiple choice questions about how and when the respondent met their partner, but also extended text answers from each respondent telling the story of how they met their spouse or partner.

Among the respondents in HCMST who met their partner online, Table 6 shows that 74% of the partnerships were between perfect strangers (the results are weighted in order to be nationally representative). Typical stories from this group include respondents who posted or

⁸ Sautter et al (2010 p.568 especially their Table 3, Model 1) found that the main predictor of Internet dating was current divorced status. Divorce is most common among middle aged heterosexuals.

answered online personal classified ads, respondents who posted or answered profiles on matchmaking websites, respondents who had partners recommended to them by matchmaking websites, respondents who met through online chat, respondents who met their partners while gaming online, and respondents who met through interest-based or church-based online communities. Only 14.1% of respondents who met their partners online had these meetings mediated in any way by friends, family, or others with whom they already had a personal relationship. Typical stories of mediated Internet meetings include friends forwarding links to promising online profiles, or of respondents whose friends sat them down in front of a computer with a chat window already opened up. Slightly less than 10% of all couples who met online are couples who first knew each other or knew of each other in a different context, and then reconnected, usually through social networking websites such as Facebook or Classmates.com.

[Table 7 here]

Internet Use as a Predictor for Having a Partner

Because the Internet is an important facilitator of new romantic relationships in the U.S., we predicted in Hypothesis 6 that individuals with Internet access at home would be more likely to be partnered, and less likely to be single. Table 7 excludes respondents who met their partners before 1995, in order to capture only respondents who could have met their partners online. With these pre-Internet couples excluded, the partnership rate is 35.9% for individuals who did not have their own Internet access prior to joining the KN panel, and 71.8% partnership rate for respondents who did have their own Internet access at home prior to joining the KN panel. After we control for respondent age, gender, education, GLB status, race, and religion via logistic regression, the adjusted odds ratio for having a partner is still 1.78 times higher (and significantly

greater than 1) for those who had Internet access before joining the KN panel. Similar results are obtained when the dependent variable is coresident partners, or married partners, with or without multivariate controls; having Internet access at home is strongly associated with having a partner.

Because of KN's provision of Internet access to the non-Internet households, the non-Internet households in this comparison have more access to the Internet than non-Internet households in the general population. The comparison of Internet to non-Internet households in the HCMST dataset probably understates the differences between Internet and non-Internet households in the general population. On the other hand, the timing of when the respondent obtained Internet access at home is not clear, so there is the possibility of reverse causality, which we control somewhat by excluding couples who met before the Internet era. Regardless of the controls, regardless of the dependent variable, Internet access at home is a powerful and significant predictor of having a romantic partner, confirming our prediction in Hypothesis 6.

Partnership Rate

Although the association between Internet access at home and having a romantic partner is a strong and statistically significant association, several important caveats apply. First, as we mention above, there could be reverse causality, i.e. partnered adults might be more likely to have Internet access at home as a result of being partnered. The second caveat has to do with the implications of the Internet's effect on romantic partnerships in the US. If it were the case that the Internet fundamentally increased the efficiency for partner search, following Hypothesis 7 we should expect to see an increase during the Internet era in the romantic partnership rate for adults, especially for same-sex couples (who are most likely to have met online) but also for middle aged heterosexuals.

[Table 8 here]

For the case of same-sex couples, Table 8 shows that there seems to have been an increase in the number of same-sex couples in the U.S. with especially strong growth between 1990 and 2000 (Smith and Gates 2001). The comparison of same-sex couples from the US Census and American Community Survey (ACS) are bedeviled by changes in the way the Census has dealt with people who report themselves as married to someone of the same gender (Gates 2009). We report the same-sex couple data in the most comparable way, with the marital status recodes excluded. It is impossible to know how much of the apparent increase in the number of same-sex couples is due to an increase in the partnering rate of gays and lesbians. One factor that certainly contributes to the increasing number of same-sex couples registered in the Census is a changing social climate that allows an increasing willingness of previously existing couples to be “out” to the Census Bureau.

Unlike the partnership rate of gays and lesbians, the overall societal adult partnership appears not to have changed during the Internet era. We examined data from both the Current Population Survey (CPS), 1995-2009, and the National Survey of Family Growth (NSFG) 1982-2008, and found no sign of a change in the overall partnership rate (tables available from the authors). The CPS data showed partnership rate stable between 72% and 73% (including married respondents and respondents with unmarried coresident partners) for adults age 30-49 in the 1995-2009 period. The NSFG showed that the percentage of women age 30-44 who had a husband or a boyfriend (whether coresident or not) was stable between 87% and 89% in the 1982-2008 period. Whereas the increasing number of same-sex couples could be construed as

being consistent with the hypothesis of increasing partnership rate for same-sex couples since the advent of the Internet era, there appears to be no such evidence for Americans in general, even in the age group in which heterosexuals are most likely to meet partners online.

Discussion:

The efficiency benefit of Internet search has had some interesting effects on the market for romantic partners in the U.S. As the more efficient market, the Internet tends to displace other markets for partners. Since 1995, the percentage of Americans meeting their partners online has risen dramatically, and the percentage meeting through almost all of the traditional ways has fallen. Family of origin and primary and secondary school (the “traditional” institutions based around place of origin) had already declined in importance as institutions that brought heterosexual couples together long before the arrival of the Internet, but the arrival of the Internet accelerated the declining influence of these origin-based traditional institutions. Friends, and the workplace are two social institutions associated with later life stages that had grown in influence during the second half of the 20th century, and these institutions (like the family and the primary and secondary schools) also have become less common as places Americans meet their romantic partners in the Internet era.

No one denies the efficiency benefits of the Internet, but argument remains over the social costs of the new efficiencies. If one believes that the health of society depends on the strength of the local traditional institutions of family, church, primary school, and neighborhood (see for instance Putnam 2000), then one might be reasonably concerned about the partial displacement of those traditional institutions by the Internet. Connecting young people with potential opposite-sex, same-race, and same-religion partners has always been one of the core

functions of the family. The rise in recent decades in the number of same-sex couples and interracial couples in the U.S. undoubtedly owes something to the declining influence of family over the mate selection process.

Some critics of social impact of the new technologies claim that the efficiency of Internet communication leads to superficial relationships that cannot compare with the richness of face-to-face relationships (Putnam 2000; and the comment on Putnam in Wellman 2001). As the relationships in the HCMST data are almost entirely face-to-face, we cannot comment on the relative merits of purely online relationships. We have, however, tested whether face-to-face relationships that were originally formed online are of lower quality or are more fragile than relationships formed in more traditional ways. We found no differences: romantic relationships originally formed online are no different in quality than any other relationships, and relationships originally formed online are no more fragile than relationships formed offline during a similar period.

In large part because of the Internet, the proportion of American couples who introduce themselves, that is who meet without the active brokerage of any third person, has risen sharply. Seventy four percent of couples who met online had previously been perfect strangers. The Internet flattens the social world (Friedman 2005) and allows people to search for, to find each other, and to meet entirely without the intervention of friends, family, neighbors or coworkers.

Although the Internet seems to be crowding out other social intermediaries to a certain extent, the traditional social institutions will never disappear as intermediaries in the dating market. Young heterosexual adults, who we presume to be among the most technologically savvy people in society, are among the least likely to meet partners online. Young adults have single others all around them which renders the search advantages of the Internet mostly

irrelevant. In environments rich with potential partners, old fashioned face-to-face socializing still trumps online search. Furthermore, even when one meets a partner online, one still needs friends and family to integrate that new partner into one's social life.

The power of Internet search is especially important in identifying potential partners for individuals who face a thin dating market. Gays, lesbians, and middle-aged heterosexuals all face thin dating markets, and these are the groups that are most likely to rely on the Internet to find their partners. Additionally, the traditional relationship brokerage institutions of family, the church and the workplace were never remotely as useful to gays and lesbians as they were to heterosexuals.

In in-depth interviews conducted to supplement the HCMST survey, interviewees explain how the Internet became important in their search for partners. One lesbian woman living in the South had no way that she knew of to find other gay women nearby. She had tried the one gay bar and the one gay church that she knew of, with disappointing results. When she discovered America Online, and realized she could search personal ads in her own ZIP code, she was able to identify a new pool of potential partners that she could not otherwise have met. The gay bar plays a large role in the social history of lesbians and gays in the US (Chauncey 1994; D'Emilio 1998; Kennedy and Davis 1993), but gay bars were not always safe or pleasant, and the bars inevitably reached only a small percentage of the local gay and lesbian communities. Compared to the gay bar, the Internet provides a substantially safer, potentially more discreet, and more anonymous way to meet people (Brown, Maycock and Burns 2005).

Lastly, because the Internet is such an important social intermediary for romantic couple formation, individuals with Internet access at home are substantially more likely to have a romantic partner. We hypothesized that the efficiencies of Internet search for romantic partners

should lead to a higher partnership rate in the U.S., but aside from the case of same-sex couples the data show no change in the partnership rate of adults in the U.S. We suspect that one of the reasons that the partnership rate in the U.S. has not risen is that older heterosexual women, who number in the millions and who face a decidedly thin dating market, are constrained by a lack of Internet access. As more technologically savvy generations of women age into late adulthood, the overall partnership rate of Americans, which seems to have been flat for some time, may rise.

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Table 1: Individual and Couple Characteristics by Couple Type

	men and women in heterosexual marriages	men and women in unmarried heterosexual partnerships	men partnered with men	women partnered with women
<i>Individual attributes</i>				
respondent Age	48.4	39.7	42.6	40.6
pct respondents with college degree	28.8	23.6	42.4	47.1
<i>Couple or household attributes</i>				
Respondent's mean household Income (\$2008)	65,700	53,100	69,200	63,000
Pct Interracial	7.2	14.9	17.3	15.0
Pct Interreligious	38.0	47.9	47.2	44.6
Pct Respondents parents (one or both) approve of union	89.6	65.0	56.8	59.2
Pct of couples that are coresident	94.4	37.5	63.8	79.7
Mean number of children in respondent's household	0.62	0.34	0.11	0.25
Mean how long ago first met (years)	24.6	9.1	11.5	10.4
Mean how long in relationship (years)	23.3	6.7	10.6	9.4
Weighted number of Individuals in the US	119,950,000	46,700,000	1,900,000	1,450,000
unweighted N	1832	703	242	232

Source: From How Couples Meet, Wave I. Respondents are age 19 and higher, weighted with weight2. Averages are weighted. Interracial couples differ among the 5 racial categories (white, black, American Indian/Native American, Asian, Other) with Hispanics spread across the 5 categories, Hispanics of "other" race coded as white, and multiracial respondents forced to pick one category, see ACS variable RACESING. Interreligious couples differ among the 5 religious categories (Protestant, Catholic, Jewish, Other, and non-religious).

Table 2: Relationship Satisfaction Only Marginally Related to How the Couple Met.

	Mean Relationship Quality (1-5 scale, 5 is best)	The OLS coefficient for each way of meeting's effect on relationship quality (with controls)
Met Through Family	4.40*	-0.12
Met Through Friends	4.47	-0.09
Met In a Bar, Restaurant, or other Public Entertainment Space	4.47	-0.07
Met Through or As Neighbors	4.48	-0.03
Met Online	4.51	0.09
Met Through or As Coworkers	4.51	0.05
Met in College or University	4.57*	0.08
Met in Primary or Secondary School	4.59**	0.15*
Met in Church	4.67***	0.13*
All Couples	4.47 (SD=0.75)	

N=2,865 for all couples, excludes 28 respondents whose partners were already deceased, and excludes 108 respondents who did not have a physical or sexual relationship with their partners. N varies for the other categories. Means weighted by weight2. Family, friends, neighbors, and coworkers may belong to either respondent or partner. Weighted OLS regressions with robust standard errors control for relationship duration, respondent race, respondent's coresidence with partner, and parental approval. N=1975 for the regressions, because parental approval was only asked of respondents who had at least one living parent. * P<.05; ** P<0.01; *** P<0.001, two tailed tests, comparing each group to all others.

Table 3 : Breakup rates not much influenced by How Couples Meet

	One Year Breakup Rate (pct)	Raw Odds Ratio	Adjusted Odds Ratio
Met Online (met within past 10 years)	15.6	0.86	0.69
Met Offline (met within past 10 years)	17.8		
Met Through Family			
Yes	8.7	1.01	1.25
No	8.7		
Met Through Friends			
Yes	9.6	1.20	1.41*
No	8.1		
Met in a Bar/Restaurant			
Yes	7.3	0.81	0.96
No	9.0		
Met Through or As Neighbors			
Yes	7.6	0.86	0.94
No	8.8		
Met Through or as Coworkers			
Yes	6.3	0.66	0.66
No	9.2		
Met in College or University			
Yes	6.5	0.72	0.90
No	8.9		
Met in Primary or Secondary School			
Yes	5.2	0.55*	0.58
No	9.2		
Met in Church			
Yes	1.4	0.14**	0.27
No	9.2		

*** P<0.001; ** P<0.01; * P<0.05

Source: From How Couples Meet, Waves I and II, met via Internet indicated either on open-text q24 or itemized list q32, merged in the variable either_internet_adjusted. N=2,520 for individuals who responded to the 1 year follow-up survey. Excluding respondents whose partners were already deceased and excluding respondents who did not have a physical or sexual relationship with their partners at wave I yields an N of 2,429. Among these, 775 met within 10 years prior to wave I. Means weighted by weight2. Family, friends, neighbors, and coworkers may belong to either respondent or partner. Each of the odds ratios is computed via separate logistic regressions. Raw odds ratios take no other factors into account. Adjusted odds ratios control for respondent's marital status at wave I, coresidence with partner at wave I, the presence of children in the respondent's household at wave I, respondent race, respondent religion, and relationship duration.

Table 4: Comparing 2009 How Couples Meet to 1992 National Health and Social Life Survey

<i>Q: Who Introduced You to Partner_Name? Choose All That Apply</i>	1992 NHSLs pct	2009 HCMST (Who were cohabiting in 1992) pct	2009 HCMST (All) pct	2009 HCMST (Met after 1999) pct
Family	15.6	15.0	11.7**	9.5***
Friends	40.3	33.1***	34.6***	30.7***
Co-workers	5.8	8.0*	8.3*	6.9
Classmates	7.3	5.7	4.9*	1.4***
Neighbors	0.7	1.4	1.6*	1.4
Introduced Self or Partner				
Introduced Self	31.7	32.0	36.0*	43.1***
Subjects had Age range 18-59 in what year	1992	1992	2009	2009
Cohabiting in what year	1992	1992	2009	2009
N	1,367	968	1,848	593

*** P<.001; ** P<.01; * P<.05, two-tailed tests.

Note: Statistical tests compare columns 2 and 3 (HCMST) with column 1 (NHSLs). Tests are two sample t-tests with unequal variance, standard deviations assume Bernoulli distribution. NHSLs data weighted by RWEIGHT, HCMST data weighted by weight2.

For NHSLs, Questions are SPINTA1-SPINTG1, referring to respondent's most recent spouse or unmarried cohabiting partner. For HCMST, questions are q33_1 to q33_7, with sample limited to partners who were coresident in 1992 (column 2), or partners who were coresident in 2009 (columns 3 and 4).

Table 5: Family and the Internet's influence on Couple Type: Comparisons with Controls.

	<i>Met Through Family</i>			<i>Met Online</i>		
	Pct met through either family	Odds Ratio	Adjusted Odds Ratio	Pct met online (met within last 10 years)	Odds Ratio	Adjusted Odds Ratio
Heterosexual Couples	18.2			17		
Same-Sex Couples	3.5	0.16**	0.19**	41	3.34***	2.93**
Same Race Couples	18.7			19		
Interracial Couples	11.4	0.56**	0.61*	16	0.85	0.82
Same Religion Couples	19.5			15		
Interreligious Couples	15.8	0.77*	0.81*	22	1.62**	1.43*
Mothers' Educations differ <4 years	18.3			19		
Mothers' Educations differ by ≥ 4 years	16.4	0.88	0.87	18	0.94	1.01
Respondent/ Partner Education gap <4 years	17.8			18		
Respondent/ Partner Education gap ≥ 4 years	18.7	1.06	1.04	22	1.27	0.98
Respondent/ Partner Age gap <10 years	17.8			19		
Respondent/ Partner Age gap ≥10 years	19.0	1.08	1.31	14	0.70	0.67

*** P<0.001; ** P<0.01; * P<0.05

Source: From How Couples Meet, Wave I, met via Internet indicated either on open-text q24 or itemized list q32, merged in the variable either_internet_adjusted. Respondents are age 18 and higher. Averages are weighted. Years ago (when met) refers to time before the How Couples Meet survey, Wave I; survey was conducted in winter, 2009. Interracial couples differ among the 5 racial categories (white, black, American Indian/Native American, Asian, Other). Interreligious couples differ among the 5 religious categories (Protestant, Catholic, Jewish, Other, and non-religious). Odds ratios and adjusted odds ratios derived from separate logistic regressions. For met online, adjusted odds ratios are adjusted for the following: whether the respondent had Internet access at home before joining the KN panel, respondent age, and how long ago (within 10 years) the couple first met. For met through family, adjusted odds ratios are adjusted for the following: respondent age, and when the couple met.

Table 6: Relatively Few Prior Social Connections for Couples that Meet Online

	Pct
Previously Strangers (no connection prior to meeting online)	74.0
Mediated (online connection between respondent and partner was mediated by friends or family)	14.1
Reunited (Respondent knew partner in some prior context, reunited online)	9.1
Insufficient Information	2.8
Total	100%

Source: From How Couples Meet, Wave I. Averages are weighted by weight2. N=286

Table 7: Respondents with own Internet Access at Home More Likely to have a Partner.

	<i>Percent with Partners (met 1995 or later)</i>			<i>Percent with Coresident Partners (met 1995 or later)</i>			<i>Percent Married (met 1995 or later)</i>		
	<i>Raw Odds Ratio</i>	<i>Adjusted Odds Ratio</i>		<i>Raw Odds Ratio</i>	<i>Adjusted Odds Ratio</i>		<i>Raw Odds Ratio</i>	<i>Adjusted Odds Ratio</i>	
Respondents without their own Internet access	35.9		18.0			10.6			
Respondents with their own Internet access	71.8	4.54***	1.78***	52.6	5.04***	2.62***	41.5	5.94***	3.36***

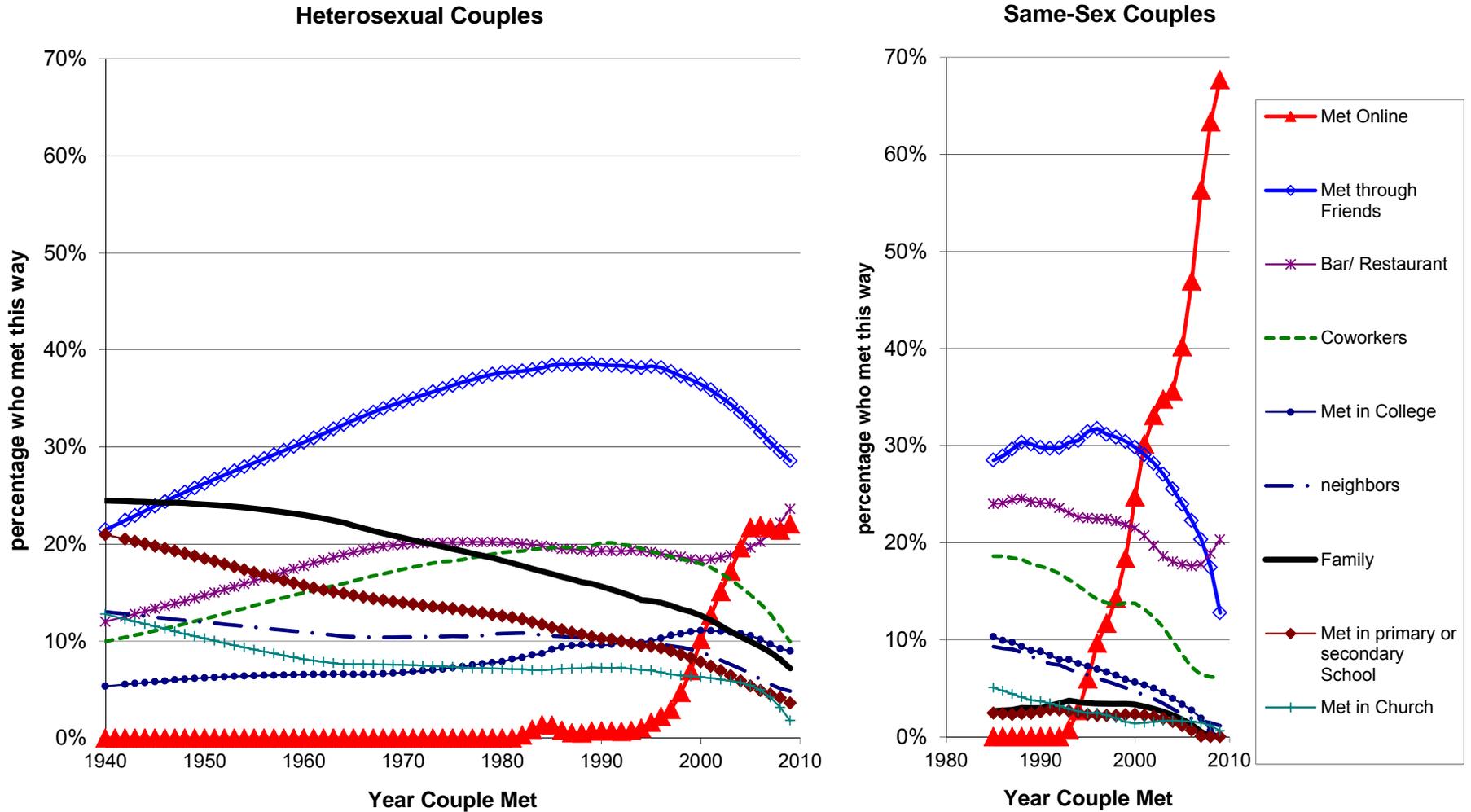
Source: From How Couples Meet, Wave I. Respondents are age 19 and higher. Sample excludes 28 respondents whose text answers implied that their reported partner was already deceased, and all respondents who met their partners before 1995. N= 2,490. Averages are weighted by weight1. *** P<0.001, two tailed tests. Raw odds ratios take only the percentage partnered (met 1995 or later) into account. Adjusted odds ratios exclude couples that met before 1995, and control via logistic regression for respondent age, gender, education, GLB status, race, and religion.

Table 8: Apparent growth in the number of same-sex couples in the U.S.

Year	Official Census Count of Same-Sex Unmarried Partners (excluding marital status recodes)
1990	145,130
2000	341,014
2005	384,629
2008	414,787

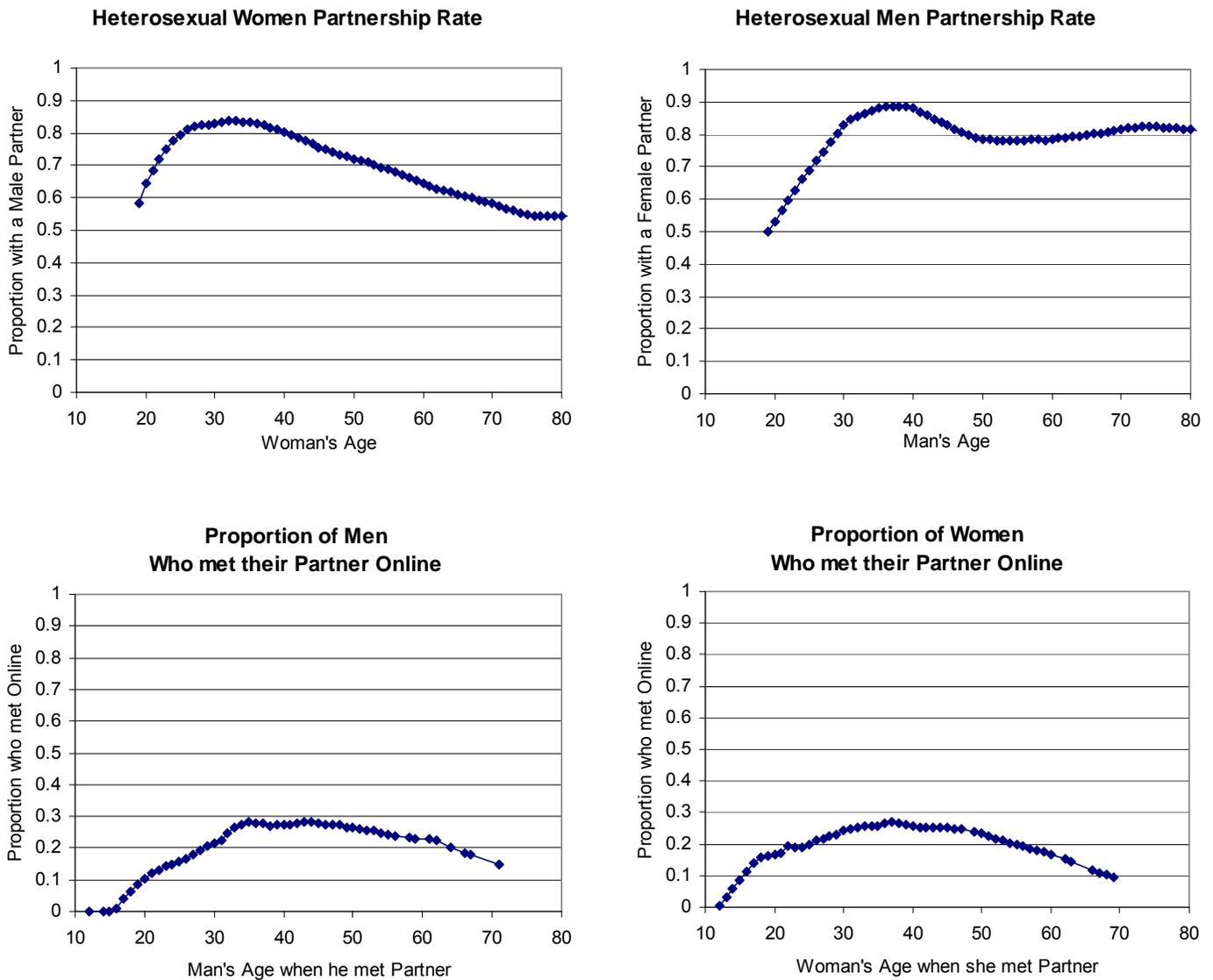
Source: U.S. Bureau of the Census (2009), and Smith and Gates (2001).

Figure 1: The Changing Way Americans Meet Their Partners



Source: From How Couples Meet and Stay Together, Wave I, variables derived from question 24 (open text answer box: “How did you meet partner_name”). N=2,462 for heterosexual couples, N=462 for same-sex couples. Because of smaller sample size, the figure for same-sex couples extends less far into the past. Respondents are age 19 and higher. Data smoothed with lowess regression, bandwidth=0.8, except for “met online” category, which is smoothed with a less-aggressive and more-faithful 5 year moving average, because “Met online” applies only to the most recent years couples met, which is the more data-rich part of the dataset. Friends, Family, and Coworkers can belong to either respondent or partner. Percentages don’t add to 100% because more than one category can apply.

Figure 2: The relationship between Partner Availability and Meeting Online



Source: HCMST survey, Wave I.

Notes: Graphs smoothed by Lowess local regressions, bandwidth 0.5

Proportion partnered is graphed against current age.

Proportion meeting online is graphed against respondent's age when the respondent first met the partner, for couples who met during 2000-2009.