Social Networks and Sexual Attitudes among American College Students

Amy Palder, PhD
Institutional Research and Effectiveness
Oglethorpe University

Dawn Michelle Baunach, PhD
Department of Sociology
Georgia State University
Atlanta, GA 30302-5020

Elisabeth O. Burgess, PhD
Gerontology Institute
Georgia State University
USA

Abstract

Attitudinal research often emphasizes individual attributes while neglecting the interconnectedness of individuals and social groups. In this article we compare the associations that individual and network characteristics have with attitudes toward arguably controversial and often personal sexual topics. Using Ordinary Least Squares regression to analyze survey data from a convenience sample of 955 students at a large public university in the southeastern United States, we find that some network effects are spurious causes of sexual attitudes, such that the networks and the attitudes are both influenced by one's background. The most reliable predictors of sexual attitudes, beyond demographics and personal characteristics, are the closeness of the networks and the political and sexual climates of those networks.

Keywords: network analysis, gender role attitudes, sexual prejudice, AIDS attitudes

1. Introduction

When contemplating attitudes towards sexually charged issues such as gender roles, homosexuality, and AIDS, what influences us more – our individual attributes (e.g., race, gender, class) or the people with whom we interact? Most attitudinal research emphasizes individual attributes; missing is the interconnectedness of individuals *and* their social networks. While others have contemplated the relationship between personal networks and individuals' attitudes (Campbell, Marsden and Hulbert, 1986; Knoke, 1990; Granovetter, 1983, Marsden & Campbell, 1984; Weatherford, 1982), this relationship has not been tested on what can arguably be called the most intimate, personal, and private kinds of attitudes. Our article bridges this gap. Guided by network theory, we seek to understand the influence of network connections on individual attitudes regarding sexually charged issues. This will facilitate a better understanding of the relationship between individuals and their personal networks regarding controversial sexual issues and illuminate the importance, or lack thereof, of relational ties as a means of transferring information and influencing attitude formation (Granovetter, 1983; Visser & Mirabile, 2004). We test our hypotheses on survey data from almost one thousand college students attending a large public university located in the southeastern United States. Ordinary Least Squares (OLS) regression techniques were used to analyze the data. Thus we ask, what influences attitudes most--who we are, or who we are with?

2. Network Analysis: An Overview

"We are each nested in a cacophony of relations with other actors in society" (Burt, 1976, p. 93). Networks are these "systems of relations" that link individuals to others in a host of ways, including economic, political, friendship, and kinship (Burt, 1976). Deconstructing these networks can be a difficult process. Much network analysis considers the embeddedness of individuals in the larger social structure, where social structure consists of an amalgamation of networks (Burt, 1980; Visser & Mirabile, 2004; Weatherford, 1982).

Completely deconstructing social structure and mapping network relations requires mapping *all* social relations within *all* networks. While conceptually appealing, this is methodologically infeasible. Therefore, in order to better understand relational ties, researchers often focus on "personal networks." Personal network analysis deconstructs network chains within a smaller, more manageable social structure (Burt 1980; Granovetter 1973, 1983; Knoke 1990; Visser and Mirabile 2004; Weatherford 1982). While many purport to use network analysis, such "analysis" does not connote one single approach, perspective, or one corpus of knowledge (Burt, 1980). Rather, "[a] loose federation of approaches, progressing on many fronts as a result of the efforts of many persons, is currently referred to as network analysis" (Burt, 1980, p. 79). Burt (1980) categorizes different kinds of network analysis according to their approach and unit of analysis. Understanding these components, and their relationship to each other, enables us to understand what type of network we are analyzing and, based on this, what type of model to use. The first component, *approach*, may be either "positional" or "relational." A positional approach focuses on each person's position, or role, within the network to understand the structure as a whole (Burt, 1980). A positional approach is appropriate when seeking to discern, for example, the roles or functions of employees in a corporation. By analyzing the entire network and individuals' *positions* within it, information can be gleaned regarding the workings of that entire structure. Essentially, a positional approach literally deconstructs *a* specific network or structure, by analyzing *all* relationships within the network (Burt, 1980).

However, understanding attitude formation does not necessitate understanding the underpinnings of an entire social structure but rather understanding the influence of individuals on others within their personal networks. A relational approach emphasizes a person's intensity and connectedness to their primary group. Typically, no two personal networks are alike. Regardless, understanding *connections*, or "relationships," within personal networks enables inferences to be made regarding both information dissemination and the influence of members connected by network chains (Campbell et al., 1986; Granovetter, 1982, Marsden & Campbell, 1984; Weatherford, 1982). An analysis that revolves around an individual or "ego," and their relationship with others or "alters," constitutes an ego-network analysis (Granovetter, 1973; Knoke, 1990). Ego-network analysis has a long and distinguished history. In Granovetter's (1983) seminal piece, he revisits and expands on "The Strength of Weak Ties" (1973), which theorized on the strength of network chains and the related influence on information dissemination. Granovetter (1983) asserts that weak ties expose individuals to a greater breadth of information. However, not all individuals have weak ties or are embedded in heterogeneous networks. *Both* strong and weak ties serve important functions (Granovetter, 1983). For example, individuals with many weak ties have greater exposure to diverse job opportunities (Campbell et al., 1986; Granovetter, 1983). Regarding weak ties, the adage "it isn't what you know, but who you know," is applicable, as weak ties indicate greater exposure to more individuals. Conversely, those with more homogeneous "closed" networks, or all strong ties, have less exposure, and relatedly fewer opportunities, outside their existing chains (Campbell et al., 1986; Granovetter, 1983).

Essentially, the more heterogeneous an ego-network, the greater the access to economic opportunities. Both strong and weak "chains" have varying degrees of relevance, depending on the subject matter contemplated (Knoke, 1990; Weatherford, 1982), and are elaborated on below. Utilizing the aforementioned relational approach on a single unit of analysis (the individual), an ego-network analysis provides researchers the ability to specifically address the influence of network ties on the "ego's" attitudes (Burt, 1980). While ego-network analysis has been highly effective in the analysis of economic opportunities (Granovetter, 1983), political viewpoints (Knoke, 1990; Weatherford, 1982), and other related fields, a gap in the current research relates to how, or if, these ego-networks affect attitudes towards sexually charged issues such as gender roles, homosexuality, and HIV/AIDS.

2.1 Network Characteristics and Hypotheses

In order to determine if a personal network influences an individual's attitudes towards sexually charged issues, we needed to deconstruct individual networks and analyze the related chains. How best to deconstruct and capture ego-network characteristics has been the subject of much research (Burt, 1980; Campbell et al., 1986). While there have been many suggestions as to how to measure the characteristics of such networks, most revolve around two key concepts: Network Range and Network Composition. Looking at network range and composition concurrently illuminates the role, and influence, of network ties on an individual's attitudes toward sexually charged issues. Range addresses the breadth of the network members (Campbell et al., 1986). Stronger ties indicate greater network homogeneity (Granovetter, 1983). To measure range, Campbell et al. (1986) suggest using five concepts: Size, Density, Multiplexity, Diversity, and Strength.

The first concept, size, simply measures the number of people within an ego's network. Larger more heterogeneous networks tend to increase exposure to differing attitudes, resulting in an increase in more modern or less prejudicial attitudes. For example, those with interaction, awareness, or any degree of contact with homosexuals or the homosexual community express fewer heterosexist attitudes (Herek, 2000).Network density speaks to the intensity of the chains within the network. While information transmission may occur with all members of the network, individuals often have more intense connections with some over others, such as family members or close intimate friends. Those enmeshed in dense networks, without countervailing weak ties and related exposure to differing viewpoints, receive redundant information from other network members (Campbell et al., 1986, Granovetter, 1983). Furthermore, individuals typically endeavor to sustain the existing ties in their own personal network (Knoke, 1990); that is, individuals "go along" with the accepted views of their network members to maintain their connections. As more socially charged or controversial subject matters tend to elicit stronger, less ambivalent, attitudinal reactions, individuals exhibit less flexible attitudes as a strategy to maintain their position within their dense network. Essentially, the more we interact with others like us, the more our attitudes and beliefs tend towards a polarized "extreme" (Knoke, 1990). For example, if someone is against abortion, interacting with others that share anti-abortion attitudes creates a group with an even stronger commitment to "pro-life."Multiplexity considers the overlap of network relationships. This characteristic addresses whether the connections between ego and alters are unique or whether the network ties overlap such that alters are also connected to each other (Campbell et al., 1986). Similar to density, high multiplexity produces greater homogeneity and redundant information.

Network diversity contemplates the attributes of the alters in the network and their similarity to, or difference from, the ego. The higher the proportion of alters that are of the same gender, race, ethnicity, education, religion, and political affiliation, the greater the likelihood of a homogeneous network. Much like the aforementioned network characteristics, a more heterogeneous network, comprised of a higher proportion of demographically dissimilar alters, indicates a greater propensity for modern, less traditional or prejudicial, views. The final measure for network range relates specifically to strength. One indicator of strong ties is evidenced by a high proportion of alters with whom the respondent feels closer (e.g. family members). Greater "closeness" indicates a more homogeneous network. Alternatively, a high proportion of weak, or distant, ties indicates a more heterogeneous network, thereby resulting in less traditional or less prejudicial views. Two other indicators of strength (frequency and duration) refer to how much contact the respondent has with alters and for how long. Increased frequency of contact and longer duration of relationship indicates stronger ties. The stronger the ties, as reflected by the aforementioned three indicators, the greater influence on the ego's attitudes. Size, density, multiplexity, diversity, and strength together provide evidence of network range, and related homogeneity/heterogeneity.

The smaller the network range, the less tolerance for diversity, and thus the greater the likelihood of a person expressing more traditional or prejudicial attitudes. Conversely, a larger range indicates greater heterogeneity and exposure to differing opinions, resulting in more modern values (Campbell et al., 1986). We hypothesize that persons with stronger and more homogeneous networks – that is, networks with less range – express more traditional attitudes (Hypothesis 1). The literature does not suggest that different forms of network range have different impacts on attitudes. However, considering that our focus is on sexually charged issues, we anticipate that certain types of range may have stronger effects than others. We hypothesize that gender, religious, and political diversity have stronger effects on sexually charged attitudes than other measures of range because gender, politics, and sex are highly interrelated (Hypothesis 2). While range is extremely relevant to this study, range alone does not predict the influence of alters on an ego's attitude. To more completely understand the effects of networks on attitudinal formation, network composition must also be considered. Network composition includes the climate, topical composition, and attitudinal valence of the network. Climate refers to the actual make-up or content of the individuals within the network. For example, historically some groups have tended to have more liberal leanings than others. Highly educated women and non hetero normative individuals tend to have more liberal or modern tendencies than the highly religious, the less educated, or heterosexual white men. Therefore, networks that contain higher proportions of more "modern thinking" alters indicate a more liberal network climate, and egos located in such networks are hypothesized to express less traditional or prejudicial attitudes (Hypothesis 3).

Topical composition refers to the frequency that the ego and alters engage in discussions on the topic in question. The more frequently individuals discuss such "charged" topics, as in our case, the greater the likelihood of ego's attitudes being influenced by those of the alters. Depending on the views of those alters, ego's attitudes may be influenced in either direction, to be more or less traditional or prejudicial. By interacting topical composition with the climate of the network, we can hypothesize a specific direction of effect. Therefore, we hypothesize that in networks comprised by more women, liberals, non-Protestants, the college educated, and gay men or lesbians, greater topical composition influences attitudes in the less traditional or prejudicial direction (Hypothesis 4). The final aspect of composition, attitude valence, measures the degree to which individuals within the group agree on specific attitudes. A higher degree of agreement indicates greater network attitudinal homogeneity. Again, greater homogeneity indicates greater ability to influence individual attitudes. Thus, we hypothesize that egos whose networks are characterized by greater agreement on a topic will have stronger attitudes on that topic, in either the negative or positive direction. In order to determine which direction, attitude valence must be interacted with the network climate; so, we expect that attitude agreement in networks with more women, liberals, non-Protestants the college educated, and lesbians or gay men produce less traditional or prejudicial attitudes (**Hypothesis 5**).

2.2 Individual Characteristics

Some of our hypotheses (Hypotheses 3, 4, and 5, discussed above) are partially based on the literature regarding individual characteristics and sexually charged attitudes. Typically, when assessing sexually charged attitudes, the emphasis has been solely on individual characteristics, such as differences between the genders, the influence of religion, or the relevance of race. Each of these variables, among others, is relevant to sexual attitude formation. Past research has found that women tend to express more egalitarian views toward gender roles than men, more accepting attitudes toward gay men and lesbians, and greater tolerance towards persons with HIV/AIDS (Bruce & Walker, 2001; Herek, 2000, 2002; Hinrichs & Rosenberg, 2002; Lottes & Kuriloff, 1992; Waldner, Sikka, & Baig, 1999). With regard to race and ethnicity, the results are a bit more mixed (Kane, 2000; Lottes & Kuriloff, 1992). African Americans are usually more likely to endorse egalitarian gender attitudes than are Whites, but African Americans' views towards homosexuality and HIV/AIDS are often less tolerant than Whites' views (Kane, 2000; Miller, 2007; Waldner et al., 1999). Members of certain religious affiliations, particularly those affiliations that advocate a literal interpretation of sacred texts, tend to hold more traditional (less egalitarian) views toward gender roles and less tolerant views towards homosexuality and HIV/AIDS (Herek, 2000, 2002; Hinrichs & Rosenberg, 2002; Lottes & Kuriloff, 1992). Even the "Black Church," with its history of civil rights activism and leadership, has been described as sanctioning anti-gay and anti-HIV attitudes (Miller, 2007). Political conservatives are more likely than political liberals to express more traditional gender role attitudes and less tolerant attitudes towards homosexuality and HIV/AIDS (Herek, 2000, 2002; Lottes & Kuriloff, 1992). Persons with more education tend to express less traditional (more modern) gender role attitudes and more tolerant attitudes towards homosexuality and HIV/AIDS (Herek, 2000, 2002). Research on attitude differences between heterosexuals and members of sexual minorities is lacking, but research does tell us that heterosexuals who know someone who is gay tend to be more accepting of homosexuality (Herek, 2000; Hinrichs & Rosenberg, 2002). And while gay men and lesbians sometimes internalize anti-gay attitudes, on the whole, sexual minority group members are presumed to be more tolerant.

3. Method

3.1 Data

The data for this project derived from a larger study of sexuality attitudes and behavior conducted by two of the authors. Between February 18 and April 4, 2002, 26-page 440-item paper surveys were distributed to students in 26 different undergraduate sociology courses. Each instructor volunteered one entire class meeting to the survey; students were informed of their rights of refusal and received no course credit for their participation. Because students can take multiple sociology courses during a semester, the survey administration team – one of the authors and one graduate student – instructed students who had previously completed the survey in another of their courses to return their blank surveys (which were labeled as "repeats" and retained) and leave the classroom. Not counting these "repeats," we calculated a final response rate of over 97 percent (with 24 refusals) and ended up with a final sample size of 955 (excluding one fraudulent survey). The sample was fairly representative of the over 25,000 students attending the university during the spring 2002 semester. Comparisons with data on all university students found our sample to be slightly younger (yet more advanced in their schooling) and to have slightly more female and African American students.

Two-thirds (65.6%) of the sample were female, and one-third (34.4%) were male. The students ranged in age from 17 to 69, with a mean age of 22.6 (median = 21, s.d. = 5.3). The university has a history as an urban commuter school, which has attracted many non-traditional students. However, in recent years the school has been moving away from its commuter school status by building its first dormitories; enough so that 83 percent of the students surveyed were between the ages of 17 and 24, and 6 percent were over the age of thirty. Related to the slightly non-traditional age distribution is that approximately 11 percent of the sample were married, separated, divorced, or widowed, and 10 percent were parents. Most of our respondents were upper-level students: 13 percent were freshmen, 21 percent sophomores, 33 percent juniors, and 31 percent seniors. The remaining participants (1.5%) were either graduate students or members of the community taking college courses. Although located in the south, the school resides in a less conservative, urban area of the state. Almost 42 percent of the students claimed to be politically liberal, nearly 32 percent were moderate, and only 26 percent described themselves as conservative. A majority of participants were Christian (58%), with almost half (45%) belonging to Protestant denominations. On a nine-point scale measuring current attendance at religious services, the sample averaged approximately 4.5, halfway between the categories for "several times a year" and "once a month." The respondents were also asked about their attendance at age 12. Most indicated more frequent attendance when younger; the mean was 6.1, corresponding closely to the "two or three times a week" category. In fact, almost 20 percent of the sample received at least some of their primary or secondary school education at religious schools. In addition, nearly 40 percent of respondents indicated that they participated in religious activities and organizations beyond attendance at services. The religiosity of the sample may be related to the fact that a large majority (73.3%) of the participants were raised in the south; the remaining were raised in the north (9.7%), mid west (3.2%), west (3.2%), or were raised outside of the United States (10.7%). A majority (61.6%) of the students were raised in medium-sized cities (over 100,000 population), large-sized cities (over one million population), or in their surrounding suburbs. Less than 19 percent were raised in rural areas or small towns.

3.2 Measures

In the analyses to follow, we included 13 indicators of network range (measuring size, density, multiplicity, diversity, and strength) and nine indicators of network composition (measuring climate, topical composition, and attitude valence). In constructing the questionnaire we modeled our network questions on those used by the General Social Survey (Davis, Smith, & Marsden, 2005) to increase their validity and reliability, and to permit comparisons to a national sample. We also included nine individual-level controls (measuring gender, race/ethnicity, geography, politics, sexuality, and religiosity) in the regression analyses. Our three dependent variable scales measured respondents' attitudes toward traditional gender roles, lesbians and gay men, and HIV/AIDS. Each of these variables is described below.

Size. The size of the respondent's network was measured by asking, "From time to time, most people discuss important matters with other people. Looking back over the last six months (that is, since August 2001), with how many people have you discussed matters important to you?" Most respondents (n = 796, 85.7%) wrote in a value between zero and ten for the open-ended question. However, a few respondents (n = 12, 1.3%) wrote in quite large numbers, ranging from 100 to 300; we recoded these responses to 100.

Density. After collecting the total number of people in their networks, we asked participants to choose the "five that you feel closest to." For those respondents whose networks had four or fewer members (n = 208, 23.5%), we asked them to "designate one, two, three, or four people as appropriate." Subsequent network questions pertained to these five (or fewer) "core" network members. To measure network density, we asked respondents to "Please think about the relations between the five people. Some of them may be total strangers in the sense that they would not recognize each other if they bumped into each other on the street. Others may be especially close, as close or closer to each other as they are to you. For each pairing of the five people, please indicate whether they are total strangers, whether they know each other, or whether they are especially close (they are closer to each other than they are to you)." We weighted these responses such that "total strangers" was weighted zero, "know each other" was weighted 0.50, and "especially close" was weighted 1. (Analyses conducted using a density measure calculated with an alternative weighting scheme – strangers = 0, known = 0.20, close = 1 – yielded very similar results to those we report.) Each tie-weight was summed and divided by the total number of ties in order to receive a mean strength of the relationships among network alters.

Multiplexity. Multiplexity was indicated by the mean number of the types of relationships egos had with their network alters. The question read, "Below is a list of some of the ways in which people are connected to each other. Some people can be connected to you in more than one way. For example, a man could be your brother and he may belong to your church and be your lawyer. For each person, please circle all the ways you are connected to that person." We provided eleven types of relationships: spouse (or live-in partner); parent; sibling (brother or sister); child; other family member; co-worker; member of same church, business, or social group; neighbor; friend; roommate; and other. The number of connection-types selected for each alter was summed and divided by the number of core network alters to obtain a mean value.

Diversity. Five kinds of network diversity were measured: gender, race/ethnicity, education, religious, and political. Each kind of diversity was indicated by the proportion of the network alters that were the same as ego on a particular characteristic. Respondents were asked to indicate each alters' gender (male or female), race/ethnicity (white/Caucasian, black/African American, Hispanic/Latino, Asian/Asian American, American Indian/Native American, or other), highest level of education (1-6 years, 7-9 years, 10-12 years, high school graduate, some college, associate/2-year degree, bachelors/4-year degree, graduate/professional degree, other, or don't know), religious affiliation (Protestant, Catholic, Jewish, Muslim, Buddhist, Hindu, other, none, or don't know), and political ideology (liberal, moderate, conservative, other, or don't know). For the educational diversity indicator, the college student respondents were considered as having "some college" themselves, and the alters were compared to this value.

Strength. Six different types of network strength were measured: closeness, family ties, close ties, weak ties, frequency, and duration. First, respondents were asked to which of their five core network alters they felt closer, if any; the closeness variable measured the proportion of the core alters to which ego felt especially close. The second strength measure indicated the proportion of core network alters that were family members (spouse, live-in partner, parent, sibling, child, or other family member); the third measure indicated the proportion of core network alters that shared another kind of close relationship with ego (coworker, neighbor, friend, or roommate); and the fourth indicated the proportion that share a weak relationship with ego (member of same church, business, social group or "other"). Network strength was also evidenced by the frequency and length of contact between ego and core network alters. We asked, "On average, do you talk to each person almost every day, at least once a week, at least once a month, or less than once a month?" The categories were attached values approximating the number of days of contact per year: 365, 52, 12, 6, respectively, which were then averaged across the core network alters. The sixth and final strength measure derived from the question, "How long have you known each person? Less than 1 year, 1 to 3 years, 3 to 6 years, or more than 6 years." The categories were assigned values measuring the duration of the relationship in years (0.5, 2, 4.5, 8, respectively) and then averaged across the alters.

Climate. We included six types of network climate: gender, race/ethnicity, education, religious, political, and sexual. Each type of climate was measured as the proportion of core network alters that were female, African American, have at least a four-year college degree, Protestant, or conservative, respectively. The last, sexual climate is a dichotomous measure indicating that at least one of ego's alters was bisexual or homosexual. We measured sexual climate this way, instead of as a proportionate measure like the others, because few network alters were (known to be) gay or bisexual.

Topical Composition. We asked respondents "About how often do you talk to each person about political and/or social matters?" The response categories were recorded to indicate the number of times per year: "almost daily" to 365, "at least weekly" to 52, "at least monthly" to 12, "at least yearly" to 6, "less than yearly" to 3, and "never" to 0. The values were averaged to yield a mean frequency of such discussions with core network alters.

Attitude Valence. Our final three network variables assessed the degree to which the network alters agreed with ego's attitudes toward homosexuality, HIV/AIDS, or the roles of men and women. Alters who strongly agreed were coded as +1, those who agreed were coded as +0.5, those who disagreed as -0.5, and those who strongly disagreed as -1. When the respondent was unsure of an alters' agreement or disagreement on an issue, we coded this as 0. We then averaged these values to obtain a mean level of agreement on the issue for the network as a whole.

Individual Characteristics. In the regression models we included controls for the respondent's, or ego's, gender (1 = female), race/ethnicity (white, black, Asian, or other, with white as the reference category), foreign student (measured as whether the respondent lived outside the United States at age 12, 1 = yes), religious affiliation (1 = Protestant), political ideology (1 = conservative), and sexual orientation (1 = bisexual or homosexual). In addition to denominational affiliation, respondents' religiosity was measured with the frequency of attendance at religious services; the categories for this variable ranged from never (1), to less than once a year (2), once a year (3), several times a year (4), once a month (5), two or three times a month (6), nearly every week (7), every week (8), or more than once a week (9).

Gender Role Attitudes. To measure gender role attitudes, we combined eleven indicators of attitudes toward women's roles and ten indicators of attitudes toward men's roles. For women's roles attitudes we selected eleven items frequently used by the General Social Survey (Davis et al., 2005), and for men's roles attitudes we used a shortened version of Thompson and Pleck's (1986) Male Role Norms scale. The Male Role Norm scale has three subscales (Status, Toughness, and Anti-Femininity) and 26 items; we selected the five items loading heaviest on the Status Norm and the five items loading heaviest on the Toughness Norm subscales. (The items are listed in Appendix A.) The internally consistent scale can theoretically range from 21 to 105, but ranged from 24 to 83 in our sample (α = .82, mean = 50.8, s.d. = 10.4); higher values indicated more traditional gender attitudes.

Sexual Prejudice. We measured respondents' attitudes toward homosexuals with Herek's Attitudes Toward Lesbians and Gay Men (ATLG-R) scale, which has been shown to be both a reliable and valid measure of sexual prejudice (Herek, 1994). Ten items assessed prejudice directed at lesbians, and ten items assessed prejudice directed at gay men. (The items are listed in Appendix B.) We combined the twenty items into the ATLG scale (mean = 47.4, s.d. = 18.2). The ATLG scale evidenced high internal consistency with an alpha value of .95 and ranged from 20 to 100, with higher values indicating more negative attitudes toward gay men and lesbians, or greater sexual prejudice.

AIDS Attitudes. Respondents' attitudes toward people with HIV/AIDS were measured with the Affect toward Persons with AIDS scale (Witt, 1989). We did not use one of Witt's scale items, "I would request a room change if I discovered that my roommate had AIDS," because the commuter-school history of the university means that, at the time of the survey, few students lived on campus in dormitories with roommates, making this particular item problematic for our sample. The resultant scale was comprised of the remaining fifteen items and demonstrated high internal consistency with an alpha value of .86 (mean = 26.2, s.d. = 7.8). (The items are listed in Appendix C.) The scale can theoretically range from 15 to 75, but ranged from 15 to 71 in our sample; higher values indicated more negative or prejudiced images of persons living with HIV/AIDS.

3.3 Analytic Technique

Prior to running the Ordinary Least Squares (OLS) regression analysis, we imputed missing values using Stata 11's "ice" procedure. "Ice" creates a file of imputed data by employing an iterative multivariate regression technique for chained equations; we set the number of iterations to 5. The "micombine" procedure, in combination with the "reg" procedure, then combines the multiple iterated data values to estimate coefficients and standard errors. Because we imputed the missing values we were able to analyze all 955 cases for the regression analysis; otherwise we would have been left with a subset of 695 cases. For each of the three dependent variables we first regressed the attitudinal scale on the network variables and then entered the individual level controls in the second model. Interaction terms (formed by multiplying the two variables in question) were entered individually into the total model.

4. Results

Table 1 presents descriptions of the network, individual, and attitude variables. We begin our discussion with a statistical portrait of the respondents' networks. Our respondents indicated that they inhabited fairly large networks, with mean network sizes of almost nine people. Their core networks were fairly dense; the core network alters tended to "know each other," on average. Moreover, these networks were characterized by some degree of multiplexity, where egos were tied to their core network alters in multiple ways. For the most part, egos inhabited fairly homogenous networks. On average, gender diversity equals 0.60 – indicating that 60 percent of the network members were the same gender as the respondent. Educational diversity was also low (mean = 0.71, s.d. = 0.28), and racial/ethnic diversity was even lower (mean = 0.82, s.d. = 0.31). However, religious and political diversity were greater (mean = 0.46, s.d. = 0.40 and mean = 0.44, s.d. = 0.39, respectively); on average,

over half of the alters in the egos' networks held different religious affiliations or political ideologies than ego. Egos' networks were dominated by relatively strong ties; typically, nearly two of the five (mean = 0.38, s.d. = 0.29) core network alters were family members. On the other hand, two of the five were "weakly" tied to ego, being either non-kin or sharing a more distant connection. Furthermore, these ties were characterized by frequent and long-term contact – on average, egos spoke with their core alters 20 times each month (mean = 239.92, s.d. = 90.60) and had known their alters for over five years (mean = 5.30, s.d. = 1.86).

Table 1: Description of Network, Individual, and Attitude Variables

Concept & Variable	Variable Description	Mean
Network Range		
Size	Number of people in network (0 to 100)	8.76
Density	Mean strength of alters' relationships (0, 0.5, 1)	0.51
Multiplexity	Mean number of types of relationships with alters (1 to 4)	1.41
Diversity		
Gender	Proportion of alters same sex as ego	0.60
Race/Ethnicity	Proportion of alters same race as ego	0.82
Education	Proportion of alters same education as ego	0.71
Religion	Proportion of alters same religion as ego	0.46
Political	Proportion of alters same political ideology as ego	0.44
Strength		
Closeness	Proportion of alters ego feels closer to	0.33
Family Ties	Proportion of alters that are family members	0.38
Close Ties	Proportion of alters that are otherwise close	0.65
Weak Ties	Proportion of alters that are distant or weak	0.38
Frequency	Mean frequency of contact with alters in days (0 to 365)	239.92
Duration	Mean length of relationship with alters in years (0.5 to 8)	5.30
Network Composition		
Topical Composition	Mean frequency of talk on political/social matters in days (0 to 365)	72.14
Climate		
Gender	Proportion of alters that are female	0.59
Race/Ethnicity	Proportion of alters that are black	0.36
Education	Proportion of alters with college degree or more	0.29
Religion	Proportion of alters that are Protestant	0.32
Political	Proportion of alters that are conservative	0.20
Sexual	At least one alter is gay or bisexual (1=yes)	0.13
Attitude Valence		
Homosexuality	Mean agreement on homosexuality attitudes (-1 to +1)	0.40
AIDS	Mean agreement on HIV/AIDS attitudes (-1 to +1)	0.49
Gender Roles	Mean agreement on gender attitudes (-1 to +1)	0.51
Individual		
Gender	Ego's sex (1=female)	0.66
Race/Ethnicity	Ego's race/ethnicity (1=white, reference)	0.47
	Ego's race/ethnicity (1=black)	0.33
	Ego's race/ethnicity (1=asian)	0.09
	Ego's race/ethnicity (1=other)	0.11
Foreign Student	Ego lived outside the U.S. at age 12 (1=yes)	0.11
Religion	Ego's religious affiliation (1=Protestant)	0.45
Attendance	Ego's attendance at religious services (1 to 9)	4.49
Political Ideology	Ego's political ideology (1=conservative)	0.22
Sexuality	Ego's sexual orientation (1=gay, lesbian, or bisexual)	0.07
Attitudes		
Gender Roles	Attitudes toward gender roles (21 to 105)	50.83
ATLG	Attitudes toward lesbians and gay men scale (20 to 100)	47.40
AIDS	Attitudes toward persons with HIV/AIDS (15 to 75)	26.17

The composition of the networks skewed in presumably liberal directions and tended to mirror the characteristics of egos, in that they were predominately female (mean = 0.59, s.d. = 0.23), non-Protestant (mean = 0.32, s.d. = 0.39), non-conservative (mean = 0.20, s.d. = 0.30), heterosexual (mean = 0.13, s.d. = 0.34), and one-third African American (mean = 0.36, s.d. = 0.45). In addition, egos were surrounded by like-minded core network alters; all three measures of attitude valence were positive, indicating general agreement.

In sum, the core networks of our college student respondents were large, yet still strong, dense, and homogenous in terms of demographic characteristics and attitudes. With the exception of size and a lesser reliance on kin for core alters, the networks described by the respondents were similar to those found by some national probability surveys (Marsden, 1987). The differences between our sample and the General Social Survey were not unexpected; the relative youth, higher education, and urban location of our sample would predict larger, less dense, and more diverse networks (Marsden, 1987). Table 2 presents the results obtained when we regressed each of the three dependent variable scales on the set of independent variables. We entered the network variables into the models first, followed by the individual controls, so that we might investigate any mediation of the network effects. In the discussion to follow we focus our attention on relationships that have obtained some level of significance. Although our data did not derive from a probability sample, we do so in order to concentrate on those effects whose size makes them less likely to be due to chance.

Table 2: OLS Regression of Network and Individual Variables on Attitudes

Variables	Gender Roles Scale		ATLG Scale		AIDS Scale	
	Network	Total	Network	Total	Network	Total
Network Range						
Network Size	-0.060*	-0.055*	-0.046	-0.005	-0.005	0.011
Density	2.097	1.659	1.066	1.078	1.712	1.515
Multiplexity	0.397	0.266	1.287	-0.758	0.139	0.258
Gender Diversity	-1.209	1.959	-1.991	-0.943	0.044	0.902
Race Diversity	0.005	2.027	1.782	1.312	1.361	2.300†
Educ. Diversity	-0.680	-0.854	0.664	0.149	-0.175	-0.141
Rel. Diversity	2.437*	0.985	4.641**	1.560	0.845	0.297
Pol. Diversity	-0.652	-0.774	-3.254*	-2.438†	0.020	0.103
Closeness	-3.985*	-1.965	-9.492***	-5.936**	-2.583*	-1.510
Family Ties	-2.719	0.045	-6.353†	-2.479	-2.491†	-1.688
Close Ties	-4.098*	-2.176	-7.887*	-3.924	-4.234**	-3.785*
Weak Ties	-1.887	-0.689	1.628	1.926	-1.463†	-1.212
Frequency	-0.005	-0006	-0.003	-0.010†	-0.003	-0.004
Duration	-0.467*	-0.486*	-0.090	0.032	-0.127	-0.095
Network Composition						
Topical Compos.	0.004	0.002	-0.009	-0.007	0.007*	0.006*
Gender Climate	-4.577**	-0.290	-5.507*	-2.226	-0.963	0.243
Race Climate	0.114	2.519	11.169***	3.225	0.652	1.795
Educ. Climate	-0.823	-0.956	-3.108	-1.866	-0.379	-0.441
Rel. Climate	-2.064*	-1.863†	4.120**	1.797	-0.486	-0.771
Pol. Climate	4.762***	1.508	16.634***	4.224*	4.238***	2.280*
Sexual Climate	-3.862***	-1.196	-10.512***	-3.426*	-3.827***	-1.994*
Attitude Valence	-4.545***	-3.665***	5.407***	3.137**	-1.887**	-1.850**
Individual Characteristics						
Gender		-8.489***		-6.137***		-2.401***
Black Race		-1.827		4.266		-0.879
Asian Race		4.533***		0.320		3.071**
Other Race		0.280		1.569		0.308
Foreign Student		3.209**		5.152***		3.226***
Religion		-0.053		2.482*		1.160†
Attendance		0.593***		2.595***		0.186†
Conservative		3.146***		9.632***		2.203**
Sexuality		-3.634*		-12.313***		-3.021**
Constant	64.924***	57.989***	50.687***	41.318***	30.816***	27.277***
R^2	0.125	0.308	0.271	0.470	0.128	0.209

p≤0.10 * p≤0.05 ** p≤0.01 *** p≤0.001 (N=955).

Our first hypothesis posited that greater network range would be associated with more progressive attitudes and conversely that greater network homogeneity would be associated with more traditional attitudes. Across all three attitude scales, network range had relatively weak effects. Indeed, few of the range measures attained statistical significance in either the network only or the total regression models. Moreover, when the relationships did attain significance, they tended to have effects opposite to those hypothesized. For example, respondents whose networks were characterized by greater closeness expressed less traditional or prejudicial attitudes. This unexpected effect is most likely due to the generally liberal leanings of the sample; such close networks understandably push attitudes in the more progressive direction. While a few of the range variables' effects were as hypothesized, the most consistent findings involved the closeness of egos' networks. Thus, these results partially support Hypothesis 1. Hypothesis 2 predicted that gender, religious, and political diversity would have stronger effects on attitudes than other types of network range. For attitudes toward homosexuality, and to a lesser extent for gender role attitudes, religious and political diversity have greater effects. More religious diversity tends to be associated with greater prejudicial or traditional views, while more political diversity tends to be associated with less prejudicial/traditional views. However, because these associations are largely rendered non significant in the total models, these results provide very limited support for Hypothesis 2.

In comparison to the limited effects of network range, network composition has more predictable and sizable effects. (In analyses not reported here but available from the authors on request, we determined that the effects of network range and network composition were independent of each other; entering the measures of range and composition simultaneously in the regression model did not affect the results.) The topical composition of a network reflects the politicized or charged nature of that network; networks more attuned to such issues – as expressed in the frequency of their discussions on them – were expected to be more polarized, either more strongly positive or more strongly negative toward a topic, depending on the networks' other characteristics. These other network characteristics, which can be associated with attitudes one way or the other, are reflected in the various climate measures. Networks with more women and gays/lesbians and with fewer African Americans and conservatives were associated with more progressive attitudes. To the contrary, networks composed of more Protestants were associated with more prejudicial attitudes toward gays and lesbians but less traditional attitudes toward gender roles. As we saw previously, though, most of these associations lost significance in the total models. Only political and sexual climate's effects remained in the total model, lending partial support for Hypothesis 3. Only one of the interaction terms between topical composition and different types of network climate attained significance in the total models. (Results available on request.) Topical composition interacted significantly with the political climate when explaining HIV/AIDS attitudes ($b = 0.018$, $p = 0.047$), but rendered the individual items insignificant. More frequent political discussions in networks with more conservatives produced slightly more prejudicial HIV/AIDS attitudes, providing very limited support for Hypothesis 4.

The agreement of network members on a particular topic fortified attitudes. Networks with greater agreement were less prejudicial or traditional with regard to HIV/AIDS and gender attitudes, again, reflecting the liberal leanings of our respondents and their networks. However, greater network agreement on gays/lesbians had the opposite effect, increasing prejudicial attitudes. Two valence climate interaction terms achieved significance in the ATLG total model, partially supporting Hypothesis 5. Attitude agreement and race climate shared a significant interaction ($b = 4.453$, $p = 0.050$), but the network's attitudinal agreement and proportion black both lost significance ($b = -3.347$, $p = 0.488$ and $b = 1.263$, $p = 0.701$, respectively). Therefore, only in networks comprised of more African Americans is the network's general agreement on attitudes toward homosexuality associated with an individual's attitudes toward being more prejudicial. Attitudinal agreement on homosexuality and sexual climate also significantly interacted ($b = -7.624$, $p = 0.024$), rendering the independent effect of sexual climate insignificant ($b = -0.336$, $p = 0.877$) but maintaining the significant effect of network attitudinal agreement ($b = 3.873$, $p = 0.001$). It is not that having a gay or lesbian network member matters, but that only in such networks does attitudinal agreement reduce prejudicial attitudes toward homosexuality. The associations between network characteristics and sexually charged attitudes are superseded by those of demographic and other personal characteristics. Some of the most consistent and strongest predictors of attitudes were respondents' gender, Asian race/ethnicity, international status, religiosity, political views, and sexual orientation. Moreover, once these personal characteristics were controlled in the total models, several of the network characteristics which initially had significant effects on attitudes, no longer retained their significance (as previously noted). This pattern of relationships suggests that some of the network effects are spurious, due instead to respondents' personal characteristics.

5. Conclusion

Personal networks can shape an individual's attitudes and behaviors. However, there are limits to networks' effects. Our research has shown that sexually charged attitudes, arguably the most personal and private kinds of attitudes, owe little to a person's network characteristics. Indeed, the evidence suggests that some network effects, with the exception of those discussed next, are spurious causes of sexually charged attitudes, such that the networks and the attitudes have both been influenced by one's background. The most reliable predictors of these attitudes, beyond demographics and personal characteristics, are the closeness of the networks and the political and sexual climates of those networks. Only in close knit networks are such attitudes discussed. The characteristics of the people in one's network are related to attitudes in predictable, albeit limited, ways. Someone with more political conservatives in their network tends to hold more traditional or prejudicial sexual views, while someone with gay men or lesbians in their network tends to hold less traditional or prejudicial views. Previous scholarship on social networks often highlights the benefits of "weak ties" (Campbell et al., 1986; Granovetter, 1973, 1983). We find differently. Our results suggest that in some situations the closeness of the network is more important. Indeed, when it comes to sexually charged issues – the kinds of topics people tend to avoid or discuss only with the closest of friends – weak ties held little sway. The attitudes of our respondents were not related to the diversity of opinions in their networks; their views were instead more of a reflection of the general climate of their networks. Earlier we quoted the adage "it isn't what you know, but who you know;" this adage still applies to our results, in that the climate of one's network can have substantial impact on one's views. However, we should add another adage that also seems quite appropriate to this situation, "birds of a feather flock together." When it comes to sexually charged issues, a person's attitudes come to reflect those of some of their network members, particularly in networks characterized by closeness.

Yet, we must use some caution in interpreting our results. Because of the nature of our survey we were only able to collect data on one side of the networks, thus the validity of our respondents' characterizations of their networks cannot be addressed. However, the reliability of the network data should be high because we used a relatively short time period (one year) and focused on the five closest network alters. The network characteristics are also somewhat incomplete because we asked about at most five people in our respondents' networks, when our respondents indicated networks nearly twice that size. Furthermore, the "name generator" we used to elicit the network data has been shown to yield alters with stronger ties to ego, more "difficult, disruptive, or conflictual connections" usually go unreported (Marsden, 1990, p. 442). We should also use caution in generalizing our findings to the general public. Research has shown that various college environments and experiences can influence attitudes, independent of a student's background (Bryant, 2003; Hinrichs & Rosenberg, 2002; Lottes & Kuriloff, 1992). Moreover, college student networks may be fundamentally different than other ego networks. Because college students tend to be younger than the general public, their networks may be more fluid and affected by their peers. Indeed, we found that the networks of our college student participants differed in expected ways from other networks, in that they are larger and less kin-based. Therefore, we are left to consider what relevance this difference in networks means for our results. Perhaps the networks of college students represent a nascent stage of ego network formation, and it is because these networks are relatively more immature that they hold less sway on attitudes. Or, perhaps because the networks are larger and more peer-based, their relationships with these attitudes are diffused. As people age, their networks may stabilize enough to exert influence; thus it would be very instructive to repeat this research on a representative sample of the U.S. adult population. However caution does not connote lack of importance. Understanding the role, or relative lack thereof, of networks on sexually charged attitudes does inform who sanctions certain behaviors and why. Essentially, it is not necessarily who we know that determines our attitudes, as we had initially anticipated, but rather who we are that informs our attitudes regarding sexually charged topics.

6. References

Bruce, K. E., & Walker, L. J. (2001). College students' attitudes about AIDS: 1986 to 2000. AIDS Education and Prevention, 13, 428-437.

Bryant, A. N. (2003). Changes in attitudes toward women's roles: Predicting gender-role traditionalism among college students. Sex Roles, 48, 131-142.

Burt, R. S. (1976). Positions in networks. Social Forces, 55, 93-122.

_____. (1980). Models of network structure. Annual Review of Sociology, 6, 79-141.

Campbell, K. E., Marsden, P. V., & Hulbert, J. S. (1986). Social resources and socioeconomic status. Social Networks, 8, 97-117.

Davis, J. A., Smith, T. W., & Marsden, P. V. (2005). General Social Surveys, 1972-2004 [computer file]. 2nd ICPSR Version. Chicago, IL: National Opinion Research Center [producer], 2005. Storrs, CT: Roper Center for Public Opinion Research, University of Connecticut / Ann Arbor, MI: Inter-university Consortium for Political and Social Research / Berkeley, CA: Computer-assisted Survey Methods Program (http://sda.berkeley.edu), University of California [distributors].

Granovetter, M. (1973). The strength of weak ties. American Journal of Sociology, 78, 1360-1380.

_____. (1982). Alienation reconsidered: The strength of weak ties. Connections, 5, 4-16.

_____. (1983). The strength of weak ties: A network theory revisited. Sociological Theory, 1, 201-233.

Herek, G. M. (1994). Assessing attitudes toward lesbians and gay men: A review of empirical research with the ATLG scale. In B. Green, & G. M. Herek (Eds.), Lesbian and gay psychology: Theory, research, and clinical applications (pp. 206-228). Thousand Oaks, Social Networks and Sexual Attitudes Pg 26CA: Sage.

_____. (2000). The psychology of sexual prejudice. Current Directions in Psychological Science, 9, 19-22.

_____. (2002). Thinking about AIDS and stigma: A psychologist's perspective. Journal of Law, Medicine & Ethics, 30, 594-607.

Kane, E. W. (2000). Racial and ethnic variations in gender-related attitudes. Annual Review of Sociology, 26, 419-439.

Knoke, D. (1990). Networks of political action: Toward theory construction. Social Forces, 68, 1041-1063.

Lottes, I. L., & Kuriloff, P. J. (1992). The effects of gender, race, religion, and political orientation on the sex role attitudes of college freshman. Adolescence, 27, 675-688.

Marsden, P. V. (1987). Core discussion networks of Americans. American Sociological Review, 52, 122-131.

_____. (1990). Network data and measurement. Annual Review of Sociology, 16, 435-463.

Marsden, P. V., & Campbell, K. E. (1984). Measuring tie strength. Social Forces, 63, 482-501.

Miller, R. L., Jr. (2007). Legacy denied: African American gay men, AIDS, and the Black Church. Social Work, 52, 51-61.

Thompson, E. H., & Pleck, J. H. (1986). The structure of male role norms. American Behavioral Scientist, 29, 531-543.

Visser, P. S., &Mirabile, R. R. (2004). Attitudes in the social context: The impact of social network composition on individual-level attitude strength. Journal of Personality and Social Psychology, 87, 779-795.

Waldner, L. K., Sikka, A., & Baig, S. (1999). Ethnicity and sex differences in university

Social Networks and Sexual Attitudes Pg 27

students' knowledge of AIDS, fear of AIDS, and homophobia. Journal of Homosexuality, 37, 117-133.

Weatherford, M. S. (1982). Interpersonal networks and political behavior. American Journal of Political Science, 26, 117-143.

Witt, L. A. (1989). Authoritarianism, knowledge of AIDS, and affect toward persons with AIDS: Implications for health education. Journal of Applied Social Psychology, 19, 599-607.

Appendix a Women's Roles and Men's Roles Scale Items

Scale Items

Women's Roles Scale Items

It is okay of a married woman earns money in business or industry if she has a husband capable of supporting her.

A working mother can establish just as warm and secure a relationship with her children as a mother who does not work.

It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family. *(Reverse coded)*

If the husband in a family wants children, but the wife decides that she does not want any children, it is all right for the wife to refuse to have children.

Women should take care of running their homes and leave running the country up to men. *(Reverse coded.)*

Women are not emotionally suited for politics. *(Reverse coded.)*

If my party nominated a woman for President, I would vote for her if she were qualified for the job.

Employers should make special efforts to hire and promote qualified women.

A preschool child is likely to suffer if his or her mother works. *(Reverse coded.)*

All in all, family life suffers when the woman has a full-time job. *(Reverse coded.)*

Having a job is the best way for a woman to be an independent person.

Men's Roles Scale Items

Success in his work has to be man's central goal in this life.

The best way for a young man to get the respect of other people is to get a job, take it seriously, and do it well.

A man owes it to his family to work at the best-paying job he can get.

It is essential for a man to always have the respect and admiration of everyone who knows him.

A man should always think everything out coolly and logically, and have rational reasons for everything he does.

A good motto for a man would be "When the going gets tough, the tough get going."

I think a young man should try to become physically tough, even if he's not big.

Fists are sometimes the only way to get out of a bad situation.

A real man enjoys a bit of danger now and then.

In some kinds of situations a man should be ready to use his fists.

Note: Respondents were provided five response categories, ranging from "strongly agree" (1) to "unsure" (3) and "strongly disagree" (5).

Appendix B Attitudes toward Lesbians and Gay Men (ATLG) Scale Items

---

Scale Items

Lesbians just can't fit into our society. *(Reverse coded.)*

A woman's homosexuality should not be a cause for job discrimination in any situation.

Female homosexuality is bad for society because it breaks down the natural divisions between the sexes. *(Reverse coded.)*

State laws against private sexual behavior between consenting adult women should be abolished.

Female homosexuality is a sin. *(Reverse coded.)*

The growing number of lesbians indicates a decline in American morals. *(Reverse coded.)*

Female homosexuality in itself is no problem unless society makes it a problem.

Female homosexuality is a threat to many of our basic social institutions. *(Reverse coded.)*

Female homosexuality is an inferior form of sexuality. *(Reverse coded.)*

Lesbians are sick. *(Reverse coded.)*

Male homosexual couples should be allowed to adopt children the same as heterosexual couples.

I think male homosexuals are disgusting. *(Reverse coded.)*

Male homosexuals should not be allowed to teach school. *(Reverse coded.)*

Male homosexuality is a perversion. *(Reverse coded.)*

Male homosexuality is a natural expression of sexuality in men.

If a man has homosexual feelings, he should do everything he can to overcome them. *(Reverse coded.)*

I would not be too upset if I learned that my son were a homosexual.

Sex between two men is just plain wrong. *(Reverse coded.)*

The idea of male homosexual marriages seems ridiculous to me. *(Reverse coded.)*

Male homosexuality is merely a different kind of lifestyle that should not be condemned.

Note: Respondents were provided five response categories, ranging from "strongly agree" (1) to "unsure" (3) and "strongly disagree" (5). (Herek, 1994)

Appendix C Affect Towards Persons with AIDS Scale Items.

Scale Items

If one of my professors had AIDS, I would drop the course. *(Reverse coded.)*

I would babysit for a child who had AIDS.

Persons with AIDS should be able to hold jobs if they are well enough to do so.

I would care for an immediate family member who had AIDS.

I would perform mouth-to-mouth resuscitation if necessary on a known AIDS victim.

I would pressure my boss to fire a co-worker with AIDS. *(Reverse coded.)*

I would dance with a person with AIDS.

It would not bother me if people knew that a close friend of mine had AIDS.

It's appropriate for children with AIDS to be banned from public schools. *(Reverse coded.)*

It's appropriate to release medical records of persons with AIDS to employers. *(Reverse coded.)*

Hospitals should have the right to turn away AIDS patients. *(Reverse coded.)*

Hospitals should have isolation wards for AIDS patients. *(Reverse coded.)*

Persons with AIDS should be excommunicated from churches. *(Reverse coded.)*

Persons with AIDS should be segregated from society. *(Reverse coded.)*

The President should be impeached if it becomes known that he has AIDS. *(Reverse coded.)*

Note: Respondents were provided five response categories, ranging from "strongly agree" (1) to "unsure" (3) and "strongly disagree" (5). (Witt 1989).