

Faith in the Age of Facebook: Exploring the Links Between Religion and Social Network Site Membership and Use

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This study examines how religiousness influences social network site (SNS) membership and frequency of use for emerging adults between 18 and 23 years old utilizing Wave 3 survey data from the National Study of Youth and Religion (NSYR). Independent of religion promoting a prosocial orientation, organizational involvement, and civic engagement, Catholics and Evangelical Protestants are more likely than the “not religious” to be SNS members, and more Bible reading is associated with lower levels of SNS membership and use. We argue there are both sacred and secular influences on SNS involvement, and social behaviors, such as being in school and participating in more non-religious organizations, generally positively influence becoming a SNS member, yet certain more private behaviors, such as Bible reading, donating money, and helping the needy, lessen SNS participation. We also suggest four areas for future research to help untangle the influence of religiousness on SNS use and vice versa.

Key words: adolescents/youth; Internet; civic participation; technology; emerging adulthood; social networks; personal religiosity.

INTRODUCTION

Social networking or “social network” (boyd and Ellison 2008) sites (SNS) are an increasingly popular topic of study for scholars in the social sciences

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(e.g. Beer 2008a, 2008b; Bobkowski 2008; Bobkowski and Kalyanaraman 2010; boyd 2007a, 2007b, 2008a, 2008b, 2009; boyd and Ellison 2008; Brake 2008; Lenhart 2009; Liu 2008; Utz 2010; Walther et al. 2008). This increased attention from scholars is happening as SNS participation is increasing dramatically around the globe: 66% of all American adult Internet users visit a SNS (Pew Internet 2012a) and Facebook alone has over 900 million users (Facebook 2012). Use is especially high among younger adults: 86% of 18–29 year olds use SNS (Pew Internet 2012a), 31% of 18–22-year-old Facebook users post status updates daily or more frequently compared with 3% of users over 49 (Pew Internet 2011b), 18–29-year-old Facebook users have substantially more online “friends” with a mean of 318.5 versus 85.1 for 57–65 year olds (Pew Internet 2012b), and usage is particularly high during college when a majority of students report daily use in order to communicate with friends they already know offline (Ellison et al. 2007; Lenhart 2009; Pempek et al. 2009). SNS use may also lead to increased social engagement: 82% of SNS users belong to a voluntary group or organization compared with 75% of all American adults and 56% of non-Internet users (Pew Internet 2011c).

While there is a growing body of research in areas such as the merits of SNS use (Bargh and McKenna 2004; Bauerlein 2008; Carr 2010; Dalton 2009; Mindich 2005; Rideout et al. 2010; Twenge and Campbell 2009) and privacy (boyd 2008b; Brake 2008; Debatin et al. 2009; Fogel and Nehmad 2008; Livingstone 2008), less attention has been paid to the role religion plays in this burgeoning social sphere (Campbell 2005). Although the influence of religion in the lives of emerging adults has been studied (e.g. Smith and Snell 2009), its impact on the new realm of SNS has been understudied.

What little evidence we do have about the relationship between SNS use and religion looks at two areas. First, once online, emerging adults do not display much of their religious identity (Bobkowski 2008; Bobkowski and Kalyanaraman 2010; Bobkowski and Pearce 2011). Second, the only research we are aware of that addresses the connection between religion and SNS usage suggests the highly religious are less likely to be SNS members and also visit SNS sites less frequently (Smith and Snell 2009; Pew Internet 2011c). In short, religiosity is associated with less participation in online communities. This is intriguing given research demonstrating the social nature of religion, that is, its proclivity to foster a prosocial orientation, involvement with more organizations, and civic engagement (Ammerman 1997, 2005; Greenberg 2000; Pattillo-McCoy 1998; Putnam 2000; Sherkat and Ellison 1999; Wood 2002). It is not clear why an active religious life tends to discourage participation in online communities, and, more generally, the role that religious tradition and other dimensions of religiosity play in influencing SNS membership and frequency of use.

The goal of this study is to offer the first systematic account of the relationship between religiousness and SNS use, examining the influence of religious affiliation, beliefs, and practices, such as religious tradition and religious

salience, as well as three areas of sociability often related to religiousness: prosocial attitudes, social activity and involvement, and civic engagement. We utilize data from the third wave of the National Study of Youth and Religion (NSYR), which contains excellent data on various dimensions of religiosity among emerging adults, as well as measures of SNS membership and frequency of use. While this study is exploratory because of the constraints of data in the NSYR regarding SNS use, we highlight important findings regarding how religious tradition and Bible reading influence SNS membership and use, and offer four suggestions for future research on the nexus between religion and SNS.

PREVIOUS LITERATURE

Emerging adulthood, defined as a liminal stage between adolescence and adulthood (typically 18–29 years of age), has received much scholarly attention in recent years (e.g. Arnett 2004; Clydesdale 2007; Smith and Snell 2009; Smith et al. 2011; Twenge 2006; Wuthnow 2007). Emerging adults are “socially engaged” because they are interpersonally connected (Smith and Snell 2009:73) through “technologically managed” relationships (Ellison et al. 2007; Pempek et al. 2009; Smith and Snell 2009:74) that are at times quite “liberating” (Walther 1996). However, some have suggested this may leave emerging adults less prepared to effectively participate in forms of civic oriented in-person community (Smith and Snell 2009), more prone to narcissism (Twenge and Campbell 2009), and less civically engaged than individuals in later stages of the life course (Putnam 2000; Smith and Snell 2009).

In this study, we explore the relationship between the religiosity of persons in the first half of emerging adulthood (18–23 years old) and their involvement in this new SNS world. We follow *boyd and Ellison’s* (2008:211) definition of SNS as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.”

We begin by exploring three possible ways that religion influences SNS membership and frequency of use introduced above: (1) Religious tradition, (2) individual measures of religious practice and salience¹, and (3) several dimensions of sociability related to religion including having prosocial attitudes, participating in organizations, and traditional measures of civic engagement. In other words, we examine whether religious identity and practice influence SNS behavior or whether these factors can be explained away by social behavior related to and fostered by religion.

¹When we use the term “salience,” we are referring to the importance of God in one’s life.

The Influence of Religious Tradition

Denominations, and the broad historical traditions to which they belong (Steensland et al. 2000), have been found to be an important source of variation in outcomes in social science research on religion. Differences in organizational structure, religious theology, and cultural expectations across these traditions (Chaves 2004) form cleavages that have consequences for many non-religious aspects of social life (e.g. Beyerlein and Hipp 2006; Driskell et al. 2008; Wuthnow 1999). For example, the literature on civic engagement suggests that the relationship between religion and volunteering varies by tradition: mainline Protestants and Catholics do more secular volunteer work (this relationship is most robust among Catholics over the life course), while conservative Protestants tend to focus on church-related volunteering (Wilson and Janoski 1995). Differences also exist when it comes to the nature of the volunteering congregations of different religious traditions do, such as handing out voting guides, registering voters, or organizing collective action within the realm of political volunteering (Beyerlein and Chaves 2003). Similarly, research on the religiosity of emerging adults (Smith and Denton 2005; Smith and Snell 2009) shows that religious tradition is related to a broad range of religious and non-religious beliefs and practices.

There are also important differences in the use of new technologies across religious traditions. Wave two of the National Congregations Study (NCS) shows American congregations are increasingly using technology to enhance their ministries but at different rates. According to the wave two NCS report, "Synagogues and more liberal Protestant congregations lead the way in using email and starting websites, while African American Protestant congregations lag behind. There is a digital divide even within the religious world" (National Congregations Study 2009:7). Others have explored how evangelicals have incorporated new technologies to communicate traditional religious beliefs (Hendershot 2004; Howard and Streck 1999; Sargeant 2000; Smith et al. 1998).

Since SNS technology is relatively new, it is not entirely clear how the more established research we have just summarized maps onto this new social space. Nevertheless, in light of the research on the acceptance and use of new technologies, we develop two hypotheses:

H1a: Compared to the non-religious, those who belong to a religious tradition will be more likely to join and use SNS.

H1b: Emerging adults who identify with Jewish and mainline Protestant traditions will be more likely than other traditions to belong to and frequently use SNS while black Protestants are less likely to engage with SNS than other traditions.

Religious Practices and Salience

While traditions may influence SNS behavior through local cultures and access to different resources at the congregational level, variance by religious

traditions might also be due individual level differences in religiousness. Previous research suggests that when emerging adults who are “religiously devoted”—measured by concepts such as high service attendance, importance of faith, closeness to God, and frequency of prayer and scripture reading—are compared with those who are “disengaged,” the religiously devoted are significantly less likely to be members of a SNS and visit a SNS once a day or more (Smith and Snell 2009:259). In other words, religion’s influence on SNS membership and frequency of use may be the result of individual-level behaviors and salience instead of a more direct influence from religious tradition. This leads us to our hypothesis about the relationship of individual religious practice and salience on SNS membership and use:

H2: The more religious emerging adults are in terms of religious practice and salience, the less likely they will be members of and frequently use SNS.

Prosocial Behaviors

Beyond religious traditions, practice, and salience, we hypothesize that three associated social attitudes and actions will help us assess religion’s association with SNS membership and use: prosocial behaviors, participation in organizations, and civic engagement. These factors are likely candidates for accounting for any relationship between religiosity and SNS membership and use. Including measures of these factors, along with religion, in the analysis that follows should help us better understand how religion and SNS use are related.

First, we examine prosocial orientations. Here, we explicitly adopt Penner and Finkelstein’s (1998:526) definition of prosocial orientation as the “enduring tendency to think about the welfare and rights of other people, to feel concern and empathy for them, and to act in a way that benefits them.” Numerous psychological studies have linked religious participation to stable traits of compassion and altruism (for a review, see Saroglou et al. 2005). This durable, positive, orientation toward others can be learned through sermons and homilies, regular interaction with others who model these ideals in religious congregations, as well as social sanctions from religious communities that control individual behavior and work to develop this general trait. This orientation toward helping others is part of the normative teachings of many religious traditions (Coward 1986).

How might prosocial orientation relate to SNS use and membership? Some scholars have argued that the frequency of SNS use is associated with narcissism (Buffardi and Campbell 2008; Mehdizadeh 2010; Twenge and Campbell 2009). Even though activities such as increasing friend counts, engaging in various forms of self-promotion, and frequently posting status updates are social, strictly defined, their purpose can be viewed as to draw public attention to the self. Other research is less consistent with a picture of the narcissistic use of SNS. For example, a 2011 study (Pew Internet 2011a) found that SNS

users were more likely to belong to voluntary organizations than non-users, and several studies have pointed out that it is a minority of users who use SNS for primarily narcissistic ends. Because of this, we have reason to believe that prosocial orientation could be either positively or negatively associated with SNS use. We expect that including measures of prosocial orientation in a model with measures of religion should help us better understand the relationship between religion and SNS membership and use. Put more formally:

H3a: If SNS use is primarily self-oriented as opposed to other-oriented, we expect the inclusion of measures of prosocial orientation will alter the relationship between religiousness and SNS membership and use in a positive direction.

H3b: If SNS use is primarily other-oriented as opposed to self-oriented, we expect the inclusion of measures of prosocial orientation will alter the relationship between religiousness and SNS membership and use in a negative direction.

Participation in Organizations

Alternatively, religion may be related to SNS use through organizational participation. On average, the highly religious tend to participate more in clubs and other voluntary associations and they tend to have more civic interactions (Putnam 2000:66–67; Smidt et al. 2008). Additionally, more religious emerging adults are involved with more organized activities (Smith and Snell 2009:263). It is not entirely clear what drives this association. Does being religious lead to more opportunities to join and participate, or are both religiousness and joining part of a similar personality type (Regnerus and Smith 2005; Wann and Hamlet 1994)?

Research on the link between participating in offline and online organizations is less clear. The unique computer-mediated form of relationships offered by SNS typically builds on existing “offline” relationships (boyd and Ellison 2008; Ellison et al. 2007; Pempek et al. 2009) even as users have more freedom online to selectively associate and personally customize social experiences (Bobkowski 2008; Bobkowski and Kalyanaraman 2010; boyd and Ellison 2008; boyd 2007a, 2007b, 2008a, 2008b; Liu 2008; Utz 2010; Walther et al. 2008). These online relationships occur in less embodied (Goffman 1959) and therefore less spontaneous and more calculated forms (boyd 2007b; Twenge and Campbell 2009). This is particularly evident in research on the presentation of self in online dating contexts (Ellison et al. 2006; Gibbs et al. 2006; Toma et al. 2008). Weak ties (Grannovetter 1973) tend to characterize online social networks (boyd and Ellison 2008; boyd 2008b), as opposed to the more typical social homogeneity and strong ties that characterize traditional civic and religious associations and the production of collective action (McAdam 1986). Pempek et al. (2009:235), for example, find that SNS encourages little offline group activity as SNS technology encourages “observing” more than “doing.” Additionally, the features that make SNS attractive to social movements, lower

costs and a reduced need for physical co-presence, need to be effectively leveraged for movements to lead to substantial change (Earl and Kimport 2011).

Since organizational involvement is related to religiousness, we would expect that the inclusion of measures of organizational involvement would reduce the influence and coefficients of religious measures. Once again, we lay out this expectation more formally:

H4: Because organizational involvement is positively associated with religiousness, we expect including measures of organizational membership and participation will alter the relationship between religiousness (measured by religious tradition and religious practice and salience) and SNS membership and use in a negative direction.

If this explanation is accurate, we expect to find the coefficients for religious tradition and religious practice and salience will be reduced as religiosity affects participation in religious organizations, which then affects SNS membership and use.

Civic Engagement

While prosocial orientations help us understand how religion might shape internal motivations that impact SNS membership and use, religion also shapes external opportunities for participation in public life. There is a growing literature that links religious involvement and identity to volunteerism for young people. Volunteer activity is greater among youth who say that religion is important (Crystal and DeBell 2002), who hold spirituality as the highest value in life (Serow and Dreyden 1999), who are church members, and who attend church more frequently (Gibson 2008; Huebner and Mancini 2003; Sundeen and Raskoff 1994). Religiosity also increases how much youth value volunteer service and say that they are likely to be involved in service work in the future (Kerestes et al. 2004; Ozorak 2003). Smith and Snell (2009) found that participation in secular and religious organized activities differed between the “religiously devoted” and “disengaged.”

More broadly, religiosity, and civic engagement have been linked in many studies. Religion has the capacity to foster social capital and community involvement through congregations and religiously affiliated community organizations (Ammerman 1997, 2005; Greenberg 2000; Pattillo-McCoy 1998; Putnam 2000; Sherkat and Ellison 1999; Wood 2002). More specifically, social scientists have demonstrated that religious involvement is linked with formal volunteering (Becker and Dhingra 2001; Cnaan et al. 1993; Lam 2002; Musick et al. 2000; Park and Smith 2000; Wilson 2000; Wilson and Janoski 1995), the learning of civic skills (Musick et al. 2000; Smidt 2001; Verba et al. 1995), the development of compassion and altruism toward others (Penner and Finklestein 1998; Saroglou et al. 2005), political activity (Beyerlein and Chaves 2003), and social service provision (Bender 2003; Cnaan et al. 1999, 2002, 2005; Lichterman 2005; Lichterman and Potts 2008; Smith 2002).

In this research, religiousness is generally associated with greater civic and social engagement.

We suggest civic engagement is one possible way religion affects SNS membership and use among emerging adults. Although there is little research that links civic engagement directly with SNS membership and use, a majority of religiously active adults view the Internet as having an impact on their ability to organize groups activities, volunteer their time for organizations, and donate money (and sizable minorities believe the Internet has a major impact on these activities) (Pew Internet 2011c). We expect, particularly for civically engaged emerging adults, that SNS membership and use will be an important way to organize and transmit information about opportunities to volunteer, engage in political activities, and donate money. Although we realize it is not the primary purpose for SNS use for most emerging adults (Pempek et al. 2009), we expect it to be a factor in SNS use. Put more formally in a hypothesis:

H5: Because traditional civic engagement is associated with religiousness, we expect including measures of civic engagement will alter the influence of religiousness (measured by religious tradition and religious practice and salience) on SNS membership and use in a negative direction.

In other words, we would expect that including civic engagement measures would reduce the influence and coefficients of religious measures.

DATA AND METHODS

The data for this study are from the first and third wave of the NSYR. The NSYR's longitudinal telephone survey began as a nationally representative telephone survey of 3,290 English- and Spanish-speaking teenagers between the ages of 13 and 17. The baseline survey was conducted with the teen respondents and one of their parents between July 2002 and April 2003 by researchers at the University of North Carolina at Chapel Hill. A random-digit dial telephone method was employed to generate numbers representative of all household telephones in the 50 United States. Also included were 80 oversampled Jewish households, bringing the total number of completed cases in the first wave of NSYR to 3,370. The second and third waves of the NSYR are re-surveys of the Wave 1 English-speaking teen respondents. All waves of the survey were conducted using a computer-assisted telephone interviewing system. In Wave 3, 2,532 original youth respondents participated in the survey for an overall Wave 1 to Wave 3 retention rate of 77.1%.

Diagnostic analyses comparing NSYR data with U.S. Census data on comparable households and with comparable adolescent surveys—such as Monitoring the Future, the National Household Education Survey, and the National Longitudinal Study of Adolescent Health—confirm that the NSYR

provides a nationally representative sample without identifiable sampling and nonresponse biases of U.S. teenagers ages 13–17 and their parents living in households (for details, see [Smith and Denton 2005](#)). For descriptive purposes, a weight was created to adjust for number of teenagers in household, number of household telephone numbers, census region of residence, and household income. A separate weight is used in multivariate analyses that controls for census region and household income, which adjusts only for the number of teenagers in household and number of household telephone numbers.

Variables

The dependent variables in this study are measures of SNS membership and frequency of use from Wave 3 of the NSYR. Four questions addressed SNS use. The first asked whether the respondent was a member of a social networking website. If a respondent responded in the affirmative, three questions followed: How often do you visit social networking sites? What are the names of the top three social networking websites where you spend the most time? If you are a member of more than one site, which do you visit most often? We focus on the first two questions: whether respondents are SNS members is the dependent variable for our logistic regressions (see table 2) and how often they use SNS, with possible values of “less than every few weeks,” “every few weeks,” “one to two days a week,” “three to five days a week,” “about once a day,” and “several times a day,” is the dependent variable in our ordered logistic regressions (see table 3).

To test our five hypotheses, we utilize a number of other variables from the NSYR. Our indicators of religious affiliation, practice, and salience are five common measures of religious practice and salience: (1) religious tradition as measured by RELTRAD ([Steensland et al. 2000](#))², (2) worship service attendance (“a few times a year,” “many times a year,” “once a month,” “2–3 times a month,” “once a week,” and “more than once a week”), (3) self-rated importance (salience) of faith in daily life (“not important at all,” “not very,” “somewhat,” “very,” or “extremely important,” (4) frequency of private prayer (“never,” “less than once a month,” “one to two times a month,” “about once a week,” “a few times a week,” “about once a day,” “many times a day”), and (5) frequency of Bible (or other sacred scripture) reading (the same scale as private prayer). Outside of the variable RELTRAD, all of the other variables in our models are coded so that higher values indicate a greater frequency of behavior or greater agreement with the survey item.

²For more information on the NSYR-generated variable based on a RELTRAD coding of teen and family reports of religious attendance and identity, see Appendix D in [Smith and Denton \(2005\)](#). We acknowledge that being in the “not religious” category of RELTRAD does not mean that emerging adults are not religious on other indicators of religiosity such as service attendance or prayer.

We also include three measures of prosocial attitudes to test Hypotheses 3a and 3b. Each measure is a four category, ordinal variable that assesses the degree to which the respondent personally cares (“do you not really care,” “care a little,” “somewhat,” and “very much care”) about the following: equality between different racial groups, the needs of the elderly, and the needs of poor people. We also include three measures of social activity and involvement to assess Hypothesis 4. Two of the measures are a simple count of the number of organized activities the respondent is involved in: one counts the number of religiously organized activities, and the other measure counts the number of organized activities not sponsored by a religious group. Because initial tests revealed that the effect of these variables is non-linear, we recoded them into four groups (“none,” “one,” “two to three,” and “four or more”) that more meaningfully distinguish between those who are not involved in these types of activities and those who are. We also include a dichotomous measure that indicates whether the respondent is “currently enrolled in school of any kind.” We suspect that being in school carries with it pressing social demands and opportunities for friendships that make SNS use more likely.

Additionally, we include three measures of civic engagement in our models to assess Hypothesis 5. The first is a dichotomous variable measuring whether the respondent participated in an organized volunteer event or program in the previous year. The second is a dichotomous measure of financial generosity indicating whether respondents donated more than \$50 of their own money to any organization or cause (including church) in the previous year. The third is an ordinal measure of informal helping behavior. This survey item asks the respondents how much (“none,” “a little,” “some,” and “a lot”) they have helped “homeless people, needy neighbors, family friends, or other people in need, directly, not through an organization?” in the last year.

Finally, our models include control variables for race/ethnicity, age³, gender, father and mother’s education, parental income, the respondent’s earnings, employment status, whether the respondent lives with their parents, and whether the respondent received help from parents with expenses within the prior 12 months. Missing data for all independent variables are handled through multiple imputation. Descriptive statistics are presented in table 1.

RESULTS

The results from our two sets of regression analysis about the relationship between religion and SNS use are mixed. In both table 2 (logistic regression) and 3 (ordered logistic regression), we begin our analysis with a set of common

³A constant equal to the average time between waves was added to the continuous measure of age at Wave 1 to approximate a more precise measure of age in the third wave (we use this as opposed to the less precise categorical measure included in the third wave).

TABLE 1 Summary Statistics for Variables, NSYR Wave 3 Survey Data

Variables	Observations	Mean	Std. Dev.	Min	Max
Dependent variables					
Member of SNS site (1 = yes, 0 = no)	2,528	0.763		0	1
Frequency of SNS use	1,975	4.207	1.534	1	6
Control variables					
Parents' income	2,532	6.288	3.199	1	11
Parents' educational attainment	2,532	6.971	2.691	0	14
White	2,532	0.683		0	1
Black	2,532	0.150		0	1
Hispanic	2,532	0.112		0	1
Other race/ethnicity	2,532	0.055		0	1
Female	2,532	0.517		0	1
Age	2,532	20.021	1.408	17.46	23.03
Earnings	2,532	5.727	5.901	0	26
Lives with parents	2,532	0.423		0	1
Receives financial assistance	2,532	0.705		0	1
Currently employed	2,532	0.650		0	1
Independent variables					
Not religious	2,532	0.247		0	1
Evangelical Protestant	2,532	0.272		0	1
Mainline Protestant	2,532	0.108		0	1
Black Protestant	2,532	0.073		0	1
Catholic	2,532	0.197		0	1
Jewish	2,532	0.011		0	1
Mormon/LDS	2,532	0.030		0	1
Other religion	2,532	0.026		0	1
Indeterminate	2,532	0.035		0	1
Religious service attendance	2,532	2.067	2.101	0	6
Importance of faith	2,532	3.240	1.276	1	5
Frequency of private prayer	2,532	3.941	2.114	1	7
Frequency of Bible reading	2,532	2.252	1.617	1	7
Cares about racial equality	2,532	2.965	1.170	1	4
Cares about needs of the poor	2,532	3.352	0.784	1	4
Cares about needs of the elderly	2,532	3.410	0.733	1	4
No. of non-religious organized activities	2,532	0.939	1.035	0	3
No. of religious organized activities	2,532	0.259	0.611	0	3
Currently enrolled in school	2,532	0.603	0.489	0	1
Volunteered through organization	2,532	0.473	0.499	0	1
Donated \$50 or more	2,532	0.338	0.473	0	1
Helped needy directly	2,532	2.267	0.978	1	4

controls (included in the models but not shown in the tables) before adding the five sets of variables: religious tradition (Model 1), religious practice and salience (Model 2), prosocial attitudes (Model 3), social activity and involvement (Model 4), and traditional measures of civic engagement (Model 5).⁴ Several of these control variables are significant in many of the models. Most notably, parents' income and parental help with finances were both positively associated with SNS membership and use across all models, while living with parents was negatively associated with both outcomes in all models. Predicted probabilities for SNS membership for these variables in the full Model 5 in table 2 help illustrate their effect: having parents help with finances increases the likelihood from 76 to 82% and living with parents drops the probability of membership from 83% to 76%. Parental educational attainment is positively associated with SNS membership, but not frequency of use. Lastly, females are more likely to be SNS members (a predicted probability in Model 5 of table 2 of 83% for females, 78% for males), but there is no statistically significant association between gender and frequency of SNS use. The respondents' earnings, race/ethnicity, and whether or not they were currently employed had no statistically detectable association with SNS membership or use. Overall, these significant control variables are likely related to how social class influences who has consistent access to computers and the Internet (Hargittai 2007, 2010).

Model 1 in table 2 reveals that there is some variation in SNS membership by religious tradition. Compared with the not religious, Catholic emerging adults are nearly twice as likely to belong to a SNS and those whose religion could not be determined and those who belonged to non-Christian and non-Jewish faiths were significantly less likely to belong to a SNS.

Model 2 in table 2 examines whether religious practices and salience affect SNS membership among emerging adults and reduce the relationship between religious tradition and SNS membership. Somewhat surprisingly, the difference between the evangelical and mainline Protestant groups and the "not religious" grows and becomes significant with the addition of these variables. In addition to the change in the influence of religious tradition, we also find that Bible reading has a significant negative effect: there is a roughly 19% proportional decrease for each unit change in the frequency of Bible reading.⁵

⁴Entering blocks of variables as opposed to combining measures did not lead to issues of multicollinearity. Typically, VIF statistics below 10 are considered acceptable for multivariate analyses. The highest VIF factor in our final model is 2.7. This is well within the range of acceptability. The average VIF across all independent variables is 1.58. Because our models do not suffer from issues of multicollinearity, combining measures together would result in a loss of explanatory precision without any clear gains.

⁵In order to compare effect size, it makes the most sense to take the inverse of odds ratios less than one. If we make the assumption that the units in each seven category measure are roughly equivalent, then the frequency of Bible reading is about 2.6 times the effect of religious service attendance in the first model ($1/.808 = 1.24$ versus 1.09) and nearly five times the effect size by Model 4.

TABLE 2 Logistic Regression Predicting SNS Membership, Age 18–23 (odds ratios, weighted)

	(1)	(2)	(3)	(4)	(5)
Religious tradition ^a					
Evangelical Protestant	1.373 ⁺	1.674*	1.717*	1.697*	1.685*
Mainline Protestant	1.516 ⁺	1.715*	1.738*	1.590 ⁺	1.523
Black Protestant	1.505	1.682	1.708	1.653	1.606
Catholic	1.956***	1.970**	2.074**	1.857**	1.839**
Jewish	1.034	1.098	1.189	1.076	1.056
Mormon/LDS	0.637	0.862	0.898	1.016	1.035
Other religion	0.516*	0.664	0.667	0.605	0.609
Indeterminate	0.491*	0.534 ⁺	0.559 ⁺	0.594	0.596
Religious identity and practice					
Religious service attendance		1.050	1.043	1.018	1.011
Importance of faith		0.936	0.941	0.967	0.965
Frequency of private prayer		1.031	1.032	1.031	1.038
Frequency of Bible reading		0.836***	0.833***	0.826***	0.826***
Prosocial attitudes					
Care about racial equality			1.187**	1.164**	1.154*
Care about the needs of the poor			0.944	0.945	0.956
Care about the needs of the elderly			0.840	0.844	0.853
Social activity and involvement					
No. of non-religious organized activities				1.229**	1.195*
No. of religious organized activities				1.031	1.021
Currently enrolled in school				1.509**	1.470**
Traditional civic engagement					
Volunteered through organization					1.385*
Donated \$50 or more					0.888
Helped needy directly					0.904
Demographic controls					
Female	1.232 ⁺	1.256 ⁺	1.287 ⁺	1.349*	1.333*
Age	0.901*	0.913 ⁺	0.913 ⁺	0.927	0.933
Race/ethnicity ^b					
Black	0.926	0.980	1.034	0.984	1.029
Hispanic	0.803	0.833	0.817	0.803	0.807
Other/mixed	1.786 ⁺	1.800*	1.725 ⁺	1.648 ⁺	1.583
Employed	1.115	1.083	1.061	1.064	1.080
Personal earnings	0.975*	0.974*	0.976*	0.986	0.988
Lives at home	0.583***	0.567***	0.580***	0.624***	0.623***

Continued

TABLE 2 *Continued*

	(1)	(2)	(3)	(4)	(5)
Parental education	1.113***	1.109***	1.100**	1.077*	1.070*
Parental financial help	1.677***	1.694***	1.683***	1.527**	1.509**
N	2,528	2,528	2,528	2,528	2,528
Pseudo R ²	0.11	0.12	0.12	0.13	0.14

Source: National Study of Youth and Religion 2002–2003, 2007–2008.

Notes: ^aReference category is “not religious.” ^bReference category is “white.”

⁺ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

The inclusion of prosocial attitudes in Model 3 does not substantially alter the significant effects of religious tradition or Bible reading. However, caring about racial equality is significant and positively associated with SNS membership. In Model 5, the probability of being a SNS member when not really caring about racial equality is 76% while the probability when one cares very much about racial equality is 83%.

Model 4 includes measures of social activity and involvement. As hypothesized, the inclusion of these variables reduces some of the effects of religious tradition (evangelical Protestants and Catholics) and Bible reading but they remain significant. The significant positive effect of organized non-religious activities on SNS membership conflicts with hypothesis 3b that participating in more religious organizations would be positively related to being a SNS member. In the complete Model 5, a person who is part of three or more non-religious organizations has an 86% probability of being a SNS member while a person not involved with any non-religious organization has a probability of 78%. We will revisit this in the discussion portion of this study.

Lastly, the inclusion of measures of traditional civic engagement in Model 5 slightly reduced the significant coefficients of the religious tradition and religious practices and salience variables. Formal volunteer activity through an organization has a significant positive effect on SNS membership. Once again, we will return to these findings in the next section.

As a way of quantifying the effect of Bible reading on SNS membership, we calculated predicted probabilities based on Model 5 for the different categories of Bible reading. This allows us to use the model to estimate the influence of one variable on the probability of the outcome while holding all other variables at some meaningful constant. For example, take a white, Catholic, employed woman, who does not live at home, is currently enrolled in school, has not volunteered or given money in the past year, receives some financial assistance from her parents, and is typical (average) on the remaining continuous and ordinal variables in Model 5. If this hypothetical person never reads the Bible, our model predicts she has a 92% probability of having SNS

membership. If this same person does read the Bible many times a day, then our model predicts a 79% probability of membership. If the same person is no longer enrolled in school, no longer belongs to a particular religious tradition, and never reads the Bible, she has an 81% probability of SNS membership. But, if she reads the Bible several times a day she has a substantially lower, 58% chance, of SNS membership. These predicted probabilities show Bible reading has a considerable influence on SNS membership, even net of other significant factors.

The results for predicting the frequency of SNS use (see table 3) are similar to the results from the previous table, though fewer variables are significant⁶. Among religious traditions, only Catholics reach a marginal level of statistical significance. However, increasing a category in the Bible reading measure significantly reduces the frequency of SNS use among emerging adults. Additionally, just as in table 2 regarding SNS membership, whether or not an emerging adult is enrolled in school has a strongly significant effect on the frequency of SNS use: the odds of increasing a category in SNS frequency if enrolled in school is 70.8% higher than those who are not enrolled. Lastly, volunteering is not statistically significant in this model, but both donating money and helping the needy significantly negatively influence the frequency of SNS use.

DISCUSSION

Given the lack of precedent for this type of study, perhaps it is not too surprising that some of our initial expectations were not supported by the subsequent analysis. Nevertheless, we do find some results, both expected and unexpected, regarding religion's association with SNS use among emerging adults that we believe to be important and that should be addressed in future research. Namely, religious tradition and one measure of religious practice, Bible reading, are associated with SNS membership and use when accounting for a variety of control variables as well as social factors such as a prosocial orientation, involvement with more organizations, and civic engagement as well as control variables.

Relating the findings to our stated Hypotheses 1a and 1b and looking at the full model for SNS membership, two traditions, Catholics and conservative Protestants, and not the Jewish and mainline Protestant traditions as suggested

⁶Because the outcome is ordinal, we use ordered logistic regression. A Brant test reveals mixed results across coefficients in the appropriateness of using an ordered logistic regression over a multinomial logistic regression. We ran separate multinomial logistic regressions and concluded that our major interpretations of the models do not differ from the results of the ordered logistic regression. Therefore, for ease of interpretation, we include the ordered logistic regression in table 3.

TABLE 3 Ordered Logistic Regression Predicting Frequency of SNS Use, Age 18–23 (odds ratios, weighted)

	(1)	(2)	(3)	(4)	(5)
Religious tradition ^a					
Evangelical Protestant	1.018	1.187	1.176	1.151	1.125
Mainline Protestant	1.330	1.455 ⁺	1.447 ⁺	1.328	1.300
Black Protestant	1.014	1.092	1.121	1.081	1.023
Catholic	1.300 ⁺	1.321	1.309	1.201	1.187
Jewish	1.597	1.552	1.548	1.355	1.386
Mormon/LDS	0.835	1.057	1.045	1.098	1.116
Other religion	0.870	0.944	0.937	0.829	0.807
Indeterminate	0.979	1.036	1.029	1.123	1.121
Religious identity and practice					
Religious service attendance		1.017	1.016	0.989	0.989
Importance of faith		0.989	0.996	1.012	1.013
Frequency of private prayer		1.002	1.005	1.005	1.012
Frequency of Bible reading		0.900*	0.904*	0.895*	0.905*
Prosocial attitudes					
Care about racial equality			1.009	0.982	0.982
Care about the needs of the poor			0.910	0.925	0.936
Care about the needs of the elderly			0.961	0.989	1.003
Social activity and involvement					
No. of non-religious organized activities				1.062	1.067
No. of religious organized activities				1.087	1.095
Currently enrolled in school				1.738***	1.671***
Traditional civic engagement					
Volunteered through organization					1.125
Donated \$50 or more					0.821 ⁺
Helped needy directly					0.885*
Demographic controls					
Female	1.008	1.021	1.057	1.067	1.065
Age	0.886***	0.890**	0.893**	0.900**	0.903**
Race/ethnicity ^b					
Black	0.911	0.943	0.942	0.883	0.940
Hispanic	0.732 ⁺	0.742 ⁺	0.757	0.741 ⁺	0.753 ⁺
Other/mixed	0.810	0.809	0.807	0.780	0.783
Employed	0.917	0.909	0.917	0.900	0.925

Continued

TABLE 3 *Continued*

	(1)	(2)	(3)	(4)	(5)
Personal earnings	0.968***	0.966***	0.966***	0.980 ⁺	0.983
Lives at home	0.669***	0.666***	0.664***	0.718**	0.716**
Parental education	1.000	1.000	1.002	0.992	0.992
Parental financial help	1.495**	1.502**	1.521***	1.396**	1.397**
<i>N</i>	1,975 ^c	1,975 ^c	1,975 ^c	1,975 ^c	1,975 ^c
Pseudo <i>R</i> ²	0.03	0.03	0.03	0.03	0.04

Source: National Study of Youth and Religion 2002–2003, 2007–2008.

Notes: ^aReference category is “not religious.” ^bReference category is “white.” ^cModels only include respondents who have membership in a SNS. ⁺ $p < .10$, $*p < .05$, $**p < .01$, $***p < .001$.

in Hypothesis 1b, significantly influence SNS membership (compared with the non-religious). This suggests certain features of these religious traditions affect whether emerging adults join online communities but not how much they use it. Other scholars (Hendershot 2004; Howard and Streck 1999; Sargeant 2000; Smith 1998) have argued conservative Protestants are quick to adopt and utilize new technologies. Our findings suggest that this may lead to an increased proclivity among young evangelicals to use technologies like SNS at the micro level. While earlier research indicated an increased use of email and website technology among Jewish and liberal Protestant congregations and less use among black Protestants (National Congregations Study 2009), these congregational differences do not play out in the same way in individual-level data of emerging adult SNS use. This could be the result of some mismatch between individual and group level data, or it could also reflect differences between age groups (emerging adults versus older members of religious traditions).

The association between identifying as Catholic and SNS membership is less clear: a different mechanism may be at play compared with conservative Protestants as Smith and Denton (2005:194) argued, “Catholic teenagers, who represent nearly one-quarter of all U.S. teens, stand out among the U.S. Christian teenagers as consistently scoring lower on most measures of religiosity.” While Catholics are lower on religiosity compared with conservative Protestants, both are positively related to SNS membership compared with the non-religious. Overall, while religious traditions encapsulate particular cultural understandings of the world and promote particular behaviors, these factors are independent of the religion, social, and control variables we have in our analysis and that are available in the NSYR.

This suggests one possibility for future research: we need more data and analysis about what exactly about religious traditions at the individual and

congregational level influences SNS behavior. For example, researchers could examine if religious traditions or congregations explicitly encourage adherents to be engaged with the world (Wilson and Janoski 1995:137) and how many people have received religious instruction, formal or informal, regarding SNS use. SNS is still relatively new and religious institutions may not have had the time to fully socialize adherents as to how religious beliefs and practices relate, if at all, to SNS.

Hypothesis 2 concerned individual religious beliefs and practices. While religious service attendance, importance of faith, and frequency of private prayer had no discernable influence on SNS membership and frequency of use, the frequency of Bible reading did have a moderate negative influence on both. This suggests the finding that the religiously devoted are less likely to use SNS (Smith and Snell 2009) is largely due to the impact of Bible reading. The inclusion of these measures of religious practice and salience did not significantly reduce the influence of religious traditions. However, it is important to note that once Bible reading is included, the difference between Protestant groups (both mainline and evangelical) and those with no affiliation grows. This suggests that Bible reading was suppressing this difference.

Our findings regarding the negative influence of Bible reading could be the result of several factors. Bible reading might somehow be a more discriminating indicator of religious engagement, meaning that emerging adults who are truly serious about their religious faith are more strongly differentiated from others by frequent Bible reading. Or, Bible reading could be a proxy measure for differences in literacy rates, education, or amount of time spent reading. Unfortunately, we do not have the measures to directly test these possibilities. However, we believe that in light of our broader analysis, lower SNS membership and use may have more to do with the solitary nature of scripture reading and less to do with any direct religious motivations. This interpretation seems to fit with the general association of SNS membership and use with social participation in various forms. Perhaps Bible reading indicates a preference for solitude over social interaction.

At the same time, this interpretation poses some challenges for why private prayer does not have a stronger association with SNS membership and frequency of use. Loveland et al. (2005) contend that private prayer encourages concern for others and is associated with various measures of civic engagement. Additionally, research on the effect of Internet use on reading shows that Internet use helps increase reading rather than compete with it (Griswold and Wright 2004; Griswold et al. 2004). However, we note that prayer is not in competition for leisure time with SNS use like Bible reading is. Both SNS use and Bible reading require more than a few minutes in a (typically) private setting. Prayer, on the other hand, can occur in a variety of settings and can be carried out quickly and spontaneously in ways that are more difficult for SNS use and Bible reading.

These findings suggest to us there is room to explore whether it is religion qua religion that leads to this finding regarding Bible reading, or whether it is simply the case that secular reading preferences show up in this particular measure of religiousness. This is a second possible direction for future research on the relationship between SNS use and religiousness: studies could investigate what dimensions of private scripture reading, whether its solitary nature, importance among other measures of religiosity, or how it relates to time use (and time spent reading), lead to lower levels of SNS use. Additionally, researchers could examine how the Bible is discussed and utilized in SNS settings and in portals or pages specifically devoted to religion (Cheong and Poon 2009).

Turning to the various social measures we included in our models, the first set we tested, several measures of a prosocial orientation, did not provide strong support for either Hypothesis 3a or Hypothesis 3b. While the influence of religious tradition increased very slightly with the addition of three measures of prosocial orientation, the effect on the influence of religious practice and salience was mixed. Only one of these three measures, caring about racial equality (positive influence on membership), proved to be significant in the models of SNS membership. One possible explanation for this would be an association with ideas about racial equality and a general political liberalism. However, this seems unlikely given the non-effect of the other two prosocial attitudes, which we would also suspect to be associated with political liberalism. This measure could also be a proxy for the openness toward people different than oneself, and participating in a SNS could increase the number of these interactions. Studies suggest that SNS use can be a boon for developing bridging social capital (Ellison et al. 2007; Steinfield et al. 2008), which may lead to increased racial tolerance. This would suggest our models are actually misspecified, and it is SNS use that changes attitudes about racial equality and not the reverse. Regardless, increased caring about the welfare of others does not reduce the influence of religious tradition and practice, meaning religion's promotion of a prosocial orientation is not the reason for SNS membership and use among emerging adults.

The next set of measures of social activity and involvement had a stronger influence on SNS membership and use. Looking at Hypothesis 4, our models show being part of non-religious organizations has a positive influence on SNS membership, while being part of more religious organizations does not influence SNS membership. When these measures are added to the models, the effect of religious tradition is reduced, but the significant finding regarding scripture reading was barely affected. There could be several explanations for this finding: perhaps non-religious organizations are different kinds of organizations with different emphases that influence SNS use, or non-religious organizations may have more effectively integrated their operations with SNS, which could encourage members to join and interact online. This finding, plus the

consistent finding that being enrolled in school has a strong, positive influence on SNS membership and use, corroborates existing research that shows online interaction and community are primarily a supplement to existing relationships first formed in the physical world (boyd and Ellison 2008; Ellison et al. 2007). For example, Facebook began in college communities among emerging adults (Kirkpatrick 2010) and has since diffused into other types of communities, including religious ones. As SNS becomes even more differentiated from school life with long-time users growing older and more older adults joining, perhaps religious organizations will also prove to influence SNS behavior in the future. A third area of possible future research would be to measure the overlap between one's religious and non-religious communities and SNS communities to help determine whether religion's influence on SNS works through friendships and social networks instead of through more formal organizations.

Hypothesis 5 predicted that those who were civically engaged would be more likely to use SNS, perhaps to organize, volunteer, and transmit information about these activities, and this might partially account for any religious influence. Formal volunteering through an organization was associated with SNS membership (but did not influence frequency of use), while donating money and helping the needy directly did not influence SNS membership or use. However, the measures of civic engagement in our models do not reduce of the relationships between religious tradition and religious practice and salience and SNS membership and use. Interestingly, formal organizational activity like volunteering is positively associated with SNS membership, while the more private activities of donating money and directly helping the needy are negatively associated with SNS frequency of use. The results suggest that SNS membership and use are more associated with the social aspects of civic engagement, but not necessarily with an overall orientation of helping others. Once again, this is consistent with the overall picture that emerges from our analyses about how religion influences SNS behavior: the likelihood of SNS membership and use is primarily associated with being part of a particular religious tradition and individual preferences for social activity or solitude (such as solitary scripture reading) independent of prosocial attitudes and connections with broader groups of people through joining non-religious organizations and civic engagement.

CONCLUSION

In this study, we have shown that SNS membership and use among American emerging adults are associated with several aspects of religiousness: two religious traditions (Catholic and conservative Protestant) are associated with a greater likelihood of SNS membership (compared with the not religious) and one religious practice, scripture reading, is associated with less SNS

membership and frequency of use.⁷ In short, religiousness shapes engagement in this increasingly important area of social life although we cannot identify exactly how these influences operate based on the available data.

Additionally, higher levels of social behavior in the offline realm are related to a greater likelihood of joining SNS communities, but these social factors do not account for the effects of the religious influences we have identified. Our findings highlight the differences in influence between social and private behavior on SNS membership and use among emerging adults. Social behavior, such as being in school and participating in more non-religious organizations, is positively linked to becoming a SNS member. By contrast, more private behaviors—such as Bible reading, donating money, and helping the needy—are related to less SNS participation.

We also suggest that these findings hint at the broader relationship between religion and SNS. In the future, will SNS be a space where increased levels of religious faith leads to higher levels of civic and social engagement (e.g. Loveland et al. 2005) or a context where religious activity has little to no impact? This would be a fourth area for future research: how do “sacralization and secularization processes” (Edgell 2012:257) work out in the SNS realm? Our findings suggest there are both sacred and secular influences on SNS membership and use among emerging adults. Several aspects of religiousness are influential but more “secular” influences like being enrolled in school are also important. When our findings are paired with research showing that emerging adults display little of their religious values online (Bobkowski 2008; Bobkowski and Kalyanaraman 2010; Bobkowski and Pearce 2011), it appears that SNS may be a social space less influenced by or more neutral toward religion. A more secularized or sacred SNS realm would affect relationships, social networks, and religious congregations and groups, particularly for younger generations that are more involved online. Our findings might simply be illustrative of the religiosity or lack thereof during a particular developmental stage or among a generational cohort. Nonetheless, the potential influence of religion on SNS activity could have profound effects.

This study is necessarily exploratory because of data constraints. While our data are unique among SNS studies because of a large sample and questions about religiosity and social activity, it is also somewhat limited because there are only a few SNS questions and none assess motivations for SNS participation. We look forward to future research that can explore some of these relationships with greater depth and also utilize additional measures. Even as we have revealed some of the interplay between religiosity and SNS use among

⁷We undertook additional analyses to examine whether there were interaction effects present between the significant religious variables or if there were suppression effects present in our findings. None of the interaction effects was significant and the additional analyses, which included adding religiosity and social behavior variables that fit with our theoretical approach, did not suggest suppression effects are present.

American emerging adults, we suspect the opposite also occurs: the new SNS realm could influence religiosity. We know relatively little regarding how religion is adapting to and interacting with SNS. As social networking sites already have hundreds of millions of users, including a large percentage of American emerging adults, collecting and analyzing more specific data in the future will be helpful in understanding how religion influences and is influenced by this important new technology and social space.

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