

Writing for Friends and Family: The Interpersonal Nature of Blogs

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This research explores variables related to the use of personal-journal style blogs for interpersonal goals. A random sample of bloggers completed surveys exploring how the combination of extraversion and self-disclosure affect strong tie network size, which in turn serves as motivation to use blogs as an alternative communication channel. Bloggers who exhibit both extraversion and self-disclosure traits tend to maintain larger strong-tie social networks and are more likely to appropriate blogs to support those relationships. Age, gender, and education have no relationship to network size, blog content, or the use of blogs as a relationship maintenance tool. These results contribute to the continuing discussion about the impact that the Internet and its tools are having on relationships by suggesting that, rather than promoting isolation, computer-mediated communication tools such as blogs often function to enhance existing relationships.

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Introduction

People have a long history of appropriating technology to fulfill specific goals. With regard to Internet-based technologies, these goals have typically been interpersonal in nature. For example, according to the Pew Internet and American Life report (Fallows, 2004), roughly 30 billion emails are sent daily, and 93% (117 million) of American adult Internet users use email. In a nationwide survey, Katz and Aspden (1997) found that the most frequent reason given for desiring Internet access was for the use of electronic mail. Seventy-nine per cent of Internet users said they use email to communicate with their immediate and extended family (Rainie, Fox, Horrigan, Lenhart, & Spooner, 2000), further evidence of the interpersonal nature of the

medium. "Social networking" sites such as Facebook.com and MySpace.com, which are explicitly designed to facilitate and enhance social networks, are also very popular. This evidence suggests that people are motivated to adopt Internet-based tools to fulfill social and interpersonal goals.

It is not surprising, then, that blogs have also been widely adopted by users for interpersonal ends, as is evident from the most prevalent category of blogs: those with content analogous to a personal diary, or journal, with the additional functionality of two-way communication (Herring, Scheidt, Bonus, & Wright, 2004, 2005; Lenhart & Fox, 2006; Schiano, Nardi, Gumbrecht, & Swartz, 2004; Viégas, 2005). There is no new technology associated with blogs; rather, they are a reconfiguration of existing web-based tools. Specifically, blogs are frequently updated web pages that generally have current and archived text-based posts. Most blogs are interactive, in that they afford visitors the opportunity to post comments (Lenhart & Fox, 2006). An important factor affecting the proliferation of blogs is ease of use, a consequence of the wide variety of software applications and hosting sites available to users. These tools enable/empower anyone with access to a computer and the Internet to create and maintain a blog, as little technical knowledge (e.g., HTML) is required. Blogging tools afford different levels of privacy, ranging from password protected sites to publicly listed and accessible sites, although the overwhelming majority of users do not restrict access to content (Lenhart & Fox, 2006).

Many questions remain, however, regarding both the antecedents to and implications of appropriating the equivalent of a "broadcasting" model of content delivery (e.g., a blog) to traditionally personal, private, and/or intimate content analogous to personal diaries and journals. What role do interpersonal motives play in the adoption and use of blogs? What kinds of individual differences are associated with this adoption process?

The goal of this study is to investigate these questions by situating technology use within users' social contexts. Specifically, we explore the impact individual traits have on the breadth and depth of blogger's immediate social networks and the extent to which these network characteristics influence people's adoption and use of blogs. A model is proposed that explicates how antecedent variables such as personality traits function to influence the size of users' strong tie social networks, which in turn predicts the adoption of blogs specifically for the purpose of relationship maintenance.

Background

There has been ongoing discussion concerning the possible impact the Internet and its communication tools may be having on social relationships. Although some research focuses on the negative aspects of communication technology (e.g., Stoll, 1995), a growing body of literature suggests that computer-mediated communication (CMC) tools facilitate and enhance relationships (Hampton & Wellman, 2000; Kraut, Kiesler, Boneva, Cummings, Helgeson, & Crawford, 2002; Stefanone & Gay,

in press) and that new Internet users are more likely to pursue these social goals, as opposed to more experienced users (Kraut, Patterson, Lundmark, Kiesler, Mukhopadhyay, & Scherlis, 1998).

In 2005, the vast majority of Internet users reported using the Internet to communicate with friends and family (Boase, Horrigan, Wellman, & Rainie, 2006). Users report specifically that the greatest benefit of using email is to maintain relationships (Stafford, Kline, & Dimmick, 1999). Research by Hampton and Wellman (2000) found that the Internet functions to support and strengthen social ties, and Franzen (2000) found that email in particular facilitates maintenance of relationships. This evidence suggests that CMC creates additional opportunities for relationship maintenance and support beyond those afforded by phones and face-to-face visits. Consistent with Herring et al. (2004, 2005), we propose that the reconfiguration of websites into interactive blogs is symptomatic of the recurring trend to adopt technology for interpersonal communication. Even the telephone, which was originally designed for commercial use in rural areas, was ultimately appropriated to fulfill interpersonal ends (Fischer, 1992).

The following discussion reviews recent research on blogs, highlighting ways in which elements of traditional websites have been “restructured” and packaged so as to promote interpersonal exchange.

Research on Blogs

The growing body of research on blogs suggests that a hallmark feature of typical blogs is content analogous to traditional diaries. For example, Herring et al. (2004, 2005) examined a random sample of blogs and classified more than 70% as personal journals, in which users posted content generally about their day-to-day lives, often focusing on personal thoughts and feelings. The authors generated their sample by using the random blog selection tool at blo.gs (<http://blo.gs>), a comprehensive tracking service that updated its index of blogs on an hourly basis and tracked blogs from a variety of popular hosting sites, including blogger.com and weblogs.com. (The random blog selection feature of blo.gs is no longer available.)

Schiano et al. (2004) conducted an ethnographic study of bloggers to explore the use of this technology for personal expression and communication. Their findings suggest that users were aware of their intended audience and expected feedback from their audience through multiple communication channels, including face-to-face (F2F) and via comments on their blog entries. Here a deviation from the traditional concept of a diary—private, secure content—is apparent, in that bloggers capitalize on the interactive nature of the Internet, as evidenced by the expectation of feedback. The affordances of a hypertext medium are incorporated and leveraged to disseminate traditionally personal, private information.

Nardi, Schiano, and Gumbrecht (2004) questioned why people are driven to post content traditionally limited to personal diaries or journals and found evidence supporting an intention to maintain close relationships. In that study, respondents indicated that their audiences were limited to close friends and family and that their

conversations were maintained through a variety of communication channels, including instant messaging (IM), email, phone, and F2F. In social network terms, these relationships can be described as strong ties, characterized by social and emotional closeness (Granovetter, 1973, 1982). However, the accuracy of bloggers' perceptions about their audience is questionable, due to the openly accessible nature of blogs—blogs may be read by Internet users other than those the bloggers had in mind (Viégas, 2005).

Use of a variety of communication channels with friends and family is expected, given that communication with strong ties tends to be multimodal (Haythornwaite, 2002). There is also evidence that bloggers tend to present themselves accurately and realistically in their blogs, and they may include personal information about their sexual identity and intimate romantic relationships (Huffaker & Calvert, 2005; Lenhart & Fox, 2006).

The results outlined above suggest congruency between content and intended audience, in as much as personal, intimate information about a person is most relevant and interesting to people who know that person, such as his or her close friends and family. One would expect intimate content to be shared in strong tie networks, because people linked by strong ties have a shared history and a partially-shared awareness. Thus, bloggers' strong ties are ideal candidates for highly personal content, although it is surprising that bloggers choose to disclose traditionally private information in a public fashion.

Personality Traits

While content and audience characteristics are important, the antecedent conditions such as individual characteristics that influence the likelihood of engaging in diary-type blogging behavior remain unclear. One of the most widely studied dimensions along which people vary systematically is personality, which can be defined as "the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment" (Allport, 1937, p. 48). The classic dispositional approach to personality involves categorizing people according to the degree to which they demonstrate specific traits. Traits, as opposed to state-based variables, refer to dimensions of thinking, behaving, or feeling that people consistently display across different situations and over time (Ajzen, 1988).

Extraversion, for example, is characterized by an outgoing disposition and includes the expression of positive affect, activity, and sociability. Highly sociable individuals need social contact and engage easily in relationships, which should result in greater numbers of social contacts (Costa & McCrae, 1991). Other characteristics of extraversion include energy and affiliation tendencies. Extraverted people are likely to maintain larger numbers of friendships, as opposed to introverted people, because of their preference to be with other people, as opposed to being alone (Lucas, Diener, Grob, Suh, & Shao, 2000). Extraversion is used to measure a trait that represents the potential people have for maintaining a wide range of relationships (breadth), as this trait is associated with engagement in one's social environment.

Hancock and Dunham (2001) explored impression formation online, suggesting that CMC affects personality judgments about others. During dyadic exchanges, text-based CMC resulted in more extreme impressions of others' extraversion and neuroticism. Aviram and Amichai-Hamburger (2005) found a significant relationship between personality variables and expectations for Internet-based romantic relationships. Further, Hamburger and Ben-Artzi's (2000) study of personality and Internet use found that for women, extraversion was associated with making social contact, while for men, it was linked to information and entertainment use of the Internet.

Nowson, Oberlander, and Gill (2005) conducted one of the very few studies exploring individual differences and blogs by analyzing the linguistic context and formality of blog content. They found that blog content is generally more formal than email; moreover, female bloggers are generally more prolific writers and are more likely to employ a contextually-dependent style of writing. The researchers also explored the relationship between blog content and personality, noting in particular that agreeableness—the tendency to be cooperative, trusting, and flexible—correlates with a more formal blog writing style.

As social beings, people adapt new forms of communication technology to meet the objective of maintaining relationships (Frantzen, 2000; Hampton & Wellman, 2000; Katz & Aspden, 1997; Nardi et al., 2004; Stefanone & Gay, *in press*). It is likely that people with specific personality attributes will experience a heightened motivation to employ new modes of communication, such as blogs, to help maintain their existing relationships, particularly when these attributes result in larger social networks comprised of close friends and family. The following discussion outlines the proposed relationship between two traits—extraversion and self-disclosure—and how the combination of these traits is expected to result in larger numbers of strong tie relationships. We then propose a positive relationship between the size of a - blogger's strong tie networks and the likelihood s/he use blogs to maintain those relationships.

Extraverted people exhibit specific types of behavior—they are comfortable meeting new people and being around many people. The most critical aspect of extraversion as a trait is that it facilitates the opportunity, or potential, to meet a wide variety of people and, over time, develop relationships with them. However, none of the characteristics associated with extraversion suggests that development of relationships will be systematic in any way with regard to intensity or depth. On the other hand, self-disclosure addresses, in Levinger's (1980) words, the likelihood of a relationship transition from "casual to very close" (p. 518). Self-disclosure is defined as the process by which someone provides personal information about their thoughts, feelings, and/or needs to another person (Johnson, 1981; Jourard, 1959). Research on relationship development suggests that relationships begin with superficial exchanges and, over time, include more personal information (Altman & Taylor, 1973). Further, the intimacy levels of self-disclosure tend to be reciprocal (Kleinke, 1979). Reciprocal exchanges are viewed as pleasing (Sermat & Smyth,

1973) and lead to higher levels of trust over time (Johnson & Noonan, 1972). The tendency to self-disclose feeds additional disclosures from others through a reciprocity effect. This process of mutual and reciprocal self-disclosure is the mechanism through which relationships develop and grow in intimacy.

The combination of extraversion and self-disclosure traits, then, should result in a greater frequency of intimate, trusting relationships. That is, for bloggers who have the combination of both extraversion and self-disclosure traits, blogs may likely become an additional channel through which to communicate with preexisting strong ties like close friends and family, because of the likelihood that these traits will result in a larger number of close relationships. Thus:

H1: There is a positive relationship between the combination of extraversion and self-disclosure traits and strong tie network size.

The hypothesized relationship is outlined in Figure 1:

Social Networks

While many network studies focus on groups as a whole, others focus on the types of relations centered on an individual, or ego. Abstractions of social network structures centered on an individual are known as ego-centered networks and include social relationships of all kinds (Mitchell, 1969). Thus, ego refers to the focal actor of a given network (Wellman, 1993). Each one of us is the focal actor of an ego-centric network. In pursuing an ego-centric approach to network analysis, the breadth and intensity of social relationships are measured for a group of individuals, resulting in a collection of ego networks, one for each individual studied. Campbell and Lee (1991) summarize the types of data typically collected in ego-network studies. Measures generally consist of summaries of attributes such as age, gender, and education level. Data also typically consist of categorical assessments of the kinds of relationships maintained with each member, which have been pre-defined by the researcher. For example, participants could be asked whether each contact they identify in their networks is a social tie or an instrumental/task related tie (Fischer, 1982).

The most frequently measured aspect of relationships is tie strength, or intensity, an indication of how close a respondent reports being to each network member (McCarty, 1996). Strong tie contacts are characterized by frequent, reciprocal communication and usually a long, stable history of interaction. Often, strong ties constitute relationships with family and close friends. In contrast, weak ties are characterized by infrequent communication, low reciprocity, and a lack of emotional



Figure 1 Model of proposed relationships

closeness (Granovetter, 1973, 1982). Some individuals may have large ego-centric networks comprised of numerous weak-tie contacts, while others may have small ego-centric networks comprised of a few strong ties. Weak and strong tie proportions in ego networks are often a function of the time necessary to maintain those relationships. In economic terms, strong tie relationships are more costly to maintain, given their richness and intensity. As the frequency of these relationships increases, so should the motivation to use cost-reducing technologies like blogs to communicate with close friends and family. In this way, communication through blogs may be designed to maintain existing relationships.

Thus far, evidence has been presented suggesting why people may adopt blogs for the purpose of maintaining strong tie social network contacts. Given that communication with strong ties, in economic terms, is more costly than with weak tie contacts, we hypothesize that large strong tie networks will predict the use of blogs for relationship maintenance. Thus:

H2: Strong tie social network size is positively related to use of blogs for relationship maintenance.

Specifically, bloggers with larger strong tie networks should have multi-modal communication with friends and family, consistent with findings presented by Nardi et al. (2004). These bloggers should hear from their friends and family via F2F interaction *and* comments posted to their blog about the content available on their blog. This interaction is conceptualized here as a “relationship maintenance” function of blogs.

Previous blog research suggests that the majority of blogs can be conceptualized as extensions of existing phenomena; the personal diary is the offline counterpart to the blog (Herring et al., 2004, 2005). However, blogs afford additional communication opportunities. Due to the intimate nature of blog content, the audience is likely to be a part of bloggers’ strong tie networks (Nardi et al., 2004). By the same token, as a channel to maintain strong tie links, blogs likely contain content that allows readers to relate to the authors. Therefore, for the purpose of maintaining relationships via blogs, people face strategic choices in terms of how much of their identity to reveal. If content is completely anonymous and does not relate directly to the author, the blog will not serve to enhance relationships. However, most blog content is publicly available, and revealing identifying information is likely to increase the risk of sacrificing privacy.

As a result of this trade-off, the degree to which a blogger provides cues in posts about his or her identity may be an indicator of the intention of a blogger to use this new channel for relationship purposes. Qian and Scott’s (2007) findings support this relationship; they found that bloggers who target audiences of friends and family are more likely to post identifying information to their blogs. Therefore, we include a variable, identifiability, to measure the extent to which authors perceive that they can be identified through their blog posts and propose the following hypothesis:

H3: People who report being easily identified by the content of their blog use their blogs to maintain existing relationships.

Method

To test the model and address the above hypotheses, the authors conducted an online survey of a sample of bloggers during June 2006. The sample was produced by first examining several major blog hosting service sites, including blogger.com and livejournal.com. Livejournal affords users the option using of social networking tools as well as blogs, resulting in a hybrid user platform. Blogger, in contrast, hosts blogs that more closely conform to the definition of blogs used in this and other studies (e.g., Herring et al., 2004, 2005). Thus, it was chosen as being more generally representative of available blogs.

Using the random blog pointer on blogger.com, a list of 1,000 unique blogs was generated. The authors then examined the list to select blogs appropriate for this study. Due to the focus of this project on active, personal blogs by individual bloggers, the following types of blogs were excluded from the study: blogs with multiple authors, blogs containing pictures only, blogs with fewer than three posts on two different dates in the last three months, blogs used strictly for commercial or organizational purposes (i.e., marketing particular products or office coordination services), and filter blogs (i.e., blogs focused on external events, such as politics). In addition, blogs with authors younger than 18 years old were eliminated. The sample was limited to English language blogs. After the above restrictions, 700 qualified blogs remained. The authors then delivered a survey invitation to 622 of the 700 selected bloggers via emails or comments posted on their blogs. The other 78 bloggers did not provide their email address or a comment option on their blogs and thus did not receive the invitation.

Six weeks after the invitations were sent out, 154 completed surveys were received, yielding a 24.7% response rate. Among the respondents, 53.4% were male and 46.6% were female, and the average age of the sample was 30.4 years ($SD = 11.5$). The highest education level achieved by the respondents is as follows: about 10% had finished high school, 18% had taken some college classes, about 40% held a bachelors degree, and 30% held a graduate-level degree. The respondents came from 32 countries. About one-third came from the U.S., about 30% came from Europe, 25% came from Asia and Australia, and the rest (about 12%) came from a variety of other regions.

Measures

Extraversion

Following previous research (McCrae & Costa, 1996), four items were used as a general measure of extraversion. Participants were asked to rate the extent to which they agree or disagree with each of the following statements on a 7-point scale, where 7 = strongly agree: "I like to have a lot of people around me," "I really enjoy talking to people," "I like to be where the action is," and "I usually prefer to do things alone" (reverse coded). Cronbach's alpha for this scale was .70.

This trait was used because most approaches and measures of personality include some form of extraversion (Watson & Clark, 1997). While other personality factors

like agreeableness and neuroticism may also impact people's strong tie network size, this initial exploration into personality and social context was limited to extraversion, given the extensive research on this trait.

Identifiability

Identifiability measured blog authors' perception of how easily their readers could tell who they were from their blog content. Three 7-point Likert scale items were developed to measure identifiability: "It is easy for my readers to tell who I am from my blog posts," "I think people who know me would be able to determine my identity from the contents of my blog," and "I think if a stranger read my blog, he or she could determine my identity." Cronbach's alpha for this scale was .76. Factor analysis revealed that the three items load onto a single factor, explaining approximately 70% of the variance.

Self-Disclosure

To measure self-disclosure, three items were adopted from the generalized self-disclosure scale developed by Wheelless and Grotz (1976). These three items are the "general" subset of the original 16-item scale. Participants were asked to imagine that they were talking to someone face-to-face when answering the questions: "I usually talk about myself for fairly long periods of time," "Once I get started, I intimately and fully reveal myself," and "I often disclose intimate, personal things about myself without hesitation." All items are measured on a 7-point scale (where 7 = strongly agree), and Cronbach's alpha was .81.

Strong Tie Network Size

The size of participants' strong-tie networks was obtained via participants' response to one question asking, "How many close friends do you have?," where a close friend was explicitly defined in the question as "someone you have known for a long time, have frequent interaction with, and have positive feelings toward." It was also noted that these strong ties should include family members.

Use of Blogs for Relationship Maintenance

Social interaction is a prerequisite for creating and maintaining any relationship. As a communication channel, blogs allow their authors to disseminate information to their social networks easily. When a blogger's family and friends respond to blog posts, a conversation is initiated; this serves to maintain the vitality of the relationship. In order to measure the degree to which two-way interaction occurs via blogs, four items were developed. Participants were asked how much they agree with the following statements on a 7-point Likert scale: "My friends talk to me about my blog posts in person," "My family talks to me about my blog posts in person," "My friends post replies in my blog," and "My family posts replies in my blog." These items, covering both computer-mediated and F2F communication, were combined to form the maintenance variable (Cronbach's alpha = .86).

Analysis

Ordinary least squares (OLS) hierarchical regression was used to control for a set of demographic variables, including age, education, and gender. In this kind of regression, groupings of variables are entered based on their assumed causal order. Using blocks of variables allows one to estimate the influence of one block of variables above and beyond the group of variables entered in an earlier block. Distributions for all variables were checked for normality, and tests for homogeneity of variances were within acceptable limits. Only the network size variable was not evenly distributed, and one response—an extreme outlier—was replaced by the mean score for that variable. Further, to test the independence assumption in regression, tolerance statistics were examined for each variable to test for multicollinearity, and those values were within acceptable limits (Menard, 1995).

Results

Scales

Table 1 presents descriptive information and zero-order correlations between the scales used in the analyses. Recall that responses to scale items are on a 7 point scale, where 7 = strongly agree. Respondents tended to be extraverted ($M = 4.58$) and reported on average about 7.5 strong tie relationships. Although only one item was used to measure strong tie network size, the mean response is consistent with extant literature on strong tie network size (Bernard, Johnson, Killworth, McCarty, Shelley, & Robinson, 1990; Hill & Dunbar, 2003). Extraversion is significantly related to self-disclosure ($r = .27$) and strong tie network size ($r = .24$). Use of blogs for relationship maintenance is significantly correlated with both identifiability ($r = .28$) and strong tie network size ($r = .23$).

The first element of the proposed model suggests that the combination of extraversion and the tendency to self-disclose will result in greater numbers of strong tie relationships. In the first model (see Table 2, below), demographic variables were entered in the first block of the OLS hierarchical regression model, followed by a second block that includes the personality variables extraversion and self-disclosure. Finally, to test the interaction hypothesis, an interaction variable was calculated using both personality variables and was entered into the final block.

Table 1 Item descriptives, reliabilities, and zero-order correlation coefficients

Scale/Item	M(SD)	EXT	SLF	ID	STN	MNT
Extraversion	4.58 (1.10)	(.86)	0.27**	0.08	0.24**	0.11
Self-disclosure	3.15 (1.56)		(.76)	0.14	0.25**	0.14
Identifiability	4.46 (1.50)			(.81)	0.16	0.28**
Strong Tie Network	7.56 (7.10)				-	0.23**
Maintenance	3.43 (2.06)					(.86)

Notes: Numbers on diagonals in parentheses represent reliability coefficients; ** $p \leq .01$.

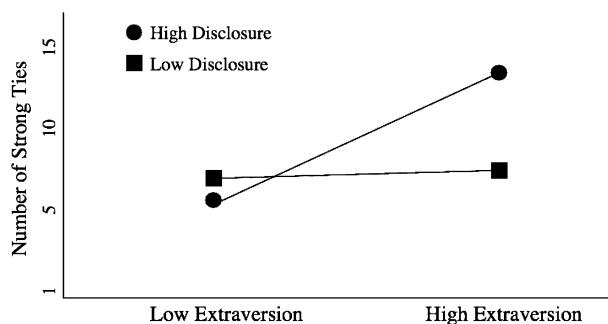
Table 2 Personality traits predicting strong tie network size

Demographics	Before Entry β	Final β
Age	-0.097	-0.069
Level of Education	0.154	0.171
Gender (M = -1, F = 1)	-0.15	-0.156
Incremental $R^2 = 4.4\%$		
Personality Variables		
Extraversion	0.198	0.220*
Self-Disclosure	0.201	0.153*
Incremental $R^2 = 10.0\%$		
Interaction		
Extraversion*Self-Disclosure	NA	0.163*
Incremental $R^2 = 2.4\%$		
$R^2 = 16.8\%^{***}$		

Note: * $p \leq .05$, *** $p \leq .001$

As shown in Table 2, all the variables in the model accounted for less than 17% of the variance in predicting the size of respondents' strong tie networks. The demographic variables accounted for 4.4% of the variance in predicting network size; none of them were significant predictors. The findings concerning personality traits are clearer. Both extraversion (final $\beta = .220$) and self-disclosure (final $\beta = .153$) were significant predictors of strong tie network size and accounted for 10% of the explained variance in the model. Finally, the interaction term calculated from both the extraversion and self-disclosure variables, used to test H1, was a significant predictor of network size (final $\beta = .163$).

To highlight the effect that the combination of extraversion and self-disclosure has on network size, we plotted the interaction between low and high extraversion, and low and high self-disclosure tendencies, against network size. A median split was used to determine high and low extraversion and self-disclosure groups. Figure 2 below clearly shows the impact of exhibiting both extraversion and self-disclosure

**Figure 2** Interaction between extraversion and self-disclosure variables

traits on strong tie network size. In the low extraversion condition, self-disclosure has no impact on network size. However, the combination of extraversion and the tendency to disclose results in a significantly larger social network size.

The second hypothesis predicts that those bloggers with large strong tie social networks will be more likely to use blogs as a mode of communication to support their strong tie social networks. OLS hierarchical regression was used to test this relationship. As Table 3 below indicates, the model explains 11.2% of the total variance in predicting usage of blogs to maintain relationships. Once again, demographic variables were entered into the first block, none of which were significant predictors of a relationship maintenance function of blogs. These variables explained 1.3% of the total variance in the model, as reported in Table 3.

Recall that identifiability was measured as the extent to which bloggers perceived that they could be identified by content available online. This variable was included to address the content of blogs, and it was expected that bloggers with large strong tie networks would report revealing identifying information when posting content to their blogs. The identifiability variable was included in the second block and was a significant predictor of the relationship maintenance function (final $\beta = .239$), accounting for 7.2% of the variance explained. This is support for the hypothesis that bloggers who report being easily identified by the content on their blog use blogs to maintain existing relationships.

Social network size was entered into the last block to test the hypothesis that strong tie network size results in the use of blogs as a relationship maintenance tool. Network size was a significant predictor (final $\beta = .169$), accounting for 2.7% of the variance explained in the model. This finding supports the second major element in our model, which suggests that strong tie network size is a significant predictor of the use of blogs to maintain existing relationships.

Table 3 Network size predicting relationship maintenance function of blog

Demographics	Before Entry β	Final β
Age	-0.034	-0.055
Level of Education	0.112	0.092
Gender (Female = 1)	0.001	0.037
Incremental $R^2 = 1.3\%$		
Content Characteristic		
Identifiability	0.271***	0.239**
Incremental $R^2 = 7.2\%$		
Social Network		
Strong Tie Network Size	NA	0.169*
Incremental $R^2 = 2.7\%$		
$R^2 = 11.2\%*$		

Note: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Discussion

The goal of this study was to explore the role of individual differences in relation to social network characteristics and to determine the extent to which this social context is related to the adoption of blogs for interpersonal goals. We hypothesized that the combination of extraversion and self-disclosure would result in larger strong tie social networks, which in turn would motivate people to utilize blogs to maintain existing relationships. The greater social and emotional intensity of strong ties supplements this motivation. This study was limited to the most prevalent category of blogs, those which resemble traditional diaries. By situating technology use in a social context, we determined that bloggers with many close friends are more likely than those with fewer close friends to use blogs for relationship maintenance. Bloggers who have both extraversion and self-disclosure traits tend to have large strong tie social network subsets and are more likely to appropriate blogs as an interpersonal communication tool.

Our results suggest that blogs have been adopted as a mode of communication for strong tie network contacts, similar to email (Franzen, 2000; Stafford, et al., 1999). Interestingly, the demographic variables did not significantly impact either of the two models tested: Age, gender, and education differences did not influence strong tie network size or the experience of friends and family using blogs to enhance communication opportunities. The measurement of identifiability, which represents the extent to which bloggers post personal and identity-revealing information, was an attempt to address content. We hypothesized that people posting identifying information use blogs to enhance existing relationships. The identifiability variable was a highly significant predictor of the relationship maintenance function of blogs, supporting the hypothesis. People who post identifying information to their blogs also report that their strong ties communicate with them *both* F2F and via comments posted on their blog, consistent with the findings of Qian and Scott about self-disclosure on blogs (2007).

Limitations of this study include the approach used to measure respondents' strong tie relationships. We chose to define explicitly what constitutes a strong tie relationship and asked respondents to report the number of people who met those criteria. In the future, more attention should be directed toward applying increasingly effective name generation techniques, rather than depending only on respondents' free recall. For example, McCarty, Bernard, Killworth, Shelley, and Johnson (1997) suggest using a list of common first names as an aid to cue participant memory during a network recall task.

Also, to further illuminate the social context of bloggers, it would be valuable to know how long they have been living in their current location and whether they are geographically proximate to their strong ties, because distance may act as a powerful motivation to use blogs as a supplemental communication channel. Hampton & Wellman (2001) found that for moderate geographic separation, phones were a popular tool for communication. However, as distance increases, so does the

appeal of CMC tools. For example, an exchange student from Korea living and studying in New York may be likely to have greater motivation to reduce communication costs with his or her strong ties, as opposed to someone who lives and works in the same town they grew up in. This is an important area for future research.

The sample of 154 survey respondents, although randomly generated, is still relatively small and calls into question issues regarding generalizability, although Blogger.com is the most common blogging software currently in use (Herring, Scheidt, Bonus & Wright, 2004, 2005). The relationship maintenance variable was developed specifically for the purpose of this study and has not been validated in other studies. Further, this study focused explicitly on relationship maintenance. It is possible that the personality traits used may generalize to a range of other uses regarding blogs. For example, extraverted bloggers could be leveraging this relatively efficient mode of communication to augment weak tie associations as well. This potential strategic use of communication technology has not been addressed in this study. In addition to extraversion and self-disclosure, future research on blogs would benefit by addressing a broader range of personality variables. Likewise, people's age or life stage may influence additional motivations, such as social support. Future research would also benefit by exploring both strong tie and instrumental weak tie network characteristics and blogging.

Finally, a larger and more balanced sample from a variety of cultures would allow for an intercultural approach to this type of research. Cultural variables such as individualism vs. collectivism may impact both social network structure and technology use and should be accounted for (Hofstede, 1984).

These results contribute to the continuing discussion regarding the impact the Internet and CMC are having on relationships (Hampton & Wellman, 2000; Katz & Aspden, 1997; Stefanone & Gay, *in press*; Stoll, 1995) by suggesting that, rather than promoting isolation, blogs, like other CMC tools, can function to enhance existing relationships. At a broad level, this literature centers on using Internet-based applications and services as platforms from which to initiate and manage interpersonal relationships. It seems that this is the ultimate appropriation, or end-goal, of the everyday user (Fallows, 2004; Lenhart & Fox, 2006). Early evidence supports this claim, as reported in Baym's (1995) meta-analysis of years of research suggesting that people appropriate the Internet and CMC tools for social goals. The evidence from the present research suggests that the Internet and CMC function to support existing relationships by providing alternative channels for communication.

This study is restricted to analysis of the strong tie subset of ego networks and is limited to one specific use of blogs. Many questions remain about other uses of blogs and what influence additional personality variables have on behavior. Discussions concerning the results of studies suggesting that people adopt new technology to facilitate and maintain relationships are often framed in a positive light. However, problems may surface from the practice of essentially broadcasting content that has been traditionally defined as personal or private, analogous to content found in

a personal diary. For example, Viégas (2005) found that more than 35% of bloggers reported getting into some kind of trouble as a result of their posts.

The results from this research constitute an additional step toward understanding the relationships among personality, social context, and CMC. It seems that the benefits of using blogs as an interpersonal communication channel outweigh the perceived costs of abdicating ownership or control of one's personal information. More research is needed to address the interplay between technology and behavior and the subsequent effects of public accessibility of personal information on the reconstruction and reconceptualization of people's privacy boundaries.

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