

# Blogging as Social Activity, or, Would You Let 900 Million People Read Your Diary?

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## ABSTRACT

"Blogging" is a Web-based form of communication that is rapidly becoming mainstream. In this paper, we report the results of an ethnographic study of blogging, focusing on blogs written by individuals or small groups, with limited audiences. We discuss motivations for blogging, the quality of social interactivity that characterized the blogs we studied, and relationships to the blogger's audience. We consider the way bloggers related to the known audience of their personal social networks as well as the wider "blogosphere" of unknown readers. We then make design recommendations for blogging software based on these findings.

## Categories and Subject Descriptors

J.4 [Social and Behavioral Sciences]: Sociology

## General Terms

Design, Human Factors

## Keywords

Blogs, computer-mediated communication, activity theory, WWW

## 1. INTRODUCTION

Weblogs, or "blogs," are frequently updated webpages with a series of archived posts, typically in reverse-chronological order. Blog posts are primarily textual, but they may contain photos or other multimedia content. Most blogs provide hypertext links to other Internet sites, and many allow for audience comments. Blogging in its current form began around 1997, with Dave Winer's Scripting News, an online record of Winer's reflections on a wide range of topics [17]. In recent years, tools have been developed to make blogging much easier and more widely accessible—effectively (as Blogger, a weblog service provider, advertises) "pushbutton publishing for the people."

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Blogs have been featured extensively in the popular media and have entered political campaigns, news organizations, businesses, and classrooms. Recent estimates place the number of sites calling themselves blogs at over 1.3 million, and growing rapidly [14]. In this paper we report on a study of blogs written by individuals or small groups, rather than heavily trafficked blogs such as those associated with political campaigns or major news organizations. Blog sites devoted to politics and punditry, to news, and to sharing technical developments, receive thousands of hits a day. We focus on less visible blogs, written by ordinary people for much smaller audiences.

Blogs vary widely in nature and content, but as they have grown in popularity they have been increasingly portrayed as online diaries or personal journals, often of the most confessional sort. Herring et al. [7] found three primary types of blogs: individually authored personal journals, "filters" (because they select and provide commentary on information from other websites), and "knowledge logs." The majority of blogs in their sample (70%) were of the personal journal, "online diary" type.

Why would so many people post their diaries—perhaps the most intimate form of personal musing—on the most public communication medium in human history, the Internet? Diaries have long been written and stored in secret; the classic diary is a volume whose privacy is secured by lock and key. We address this question in the context of a study that examines blogging from the blogger's point of view through ethnographic interviews and continued close readings of blog posts. In this paper, we analyze why and how people create and use blogs, and argue that blogs are more like radio shows than they are like diaries. As the newest arrow in the quiver of online communication tools, the affordances of blogging are currently being worked out by millions of users, and tool-makers are adapting blog features to this use.

Blogs certainly may look like diaries or personal journals. Here is a post from one of the bloggers in our study. "Lara" worked at Google, having graduated from Stanford in June, 2003.

So I had my Google team dinner tonight--soooo tasty. We went to Lavanda (in Palo Alto, on University, where The Good Earth used to be--and good riddance, I'm glad they replaced the vegetarians w/oh-so-tasty meat). It was fantastic--I had awesome steak, and it was a fun atmosphere, and we stayed for three hours, and I enjoyed myself a lot. I also got a gift certificate to the Century 16, and a container of Google Goo (like silly putty, only in a much larger quantity), for all the hard work I've put in so far. Not too shabby, eh? I then took successive study breaks with Claudia and then Walter, although I had no studying to break from and was too full to want food. Too bad everyone has dead week and finals! I miss people.

Such statements could easily be entries in a private diary. The writer related experiences from her day including small details, said how she felt about the experiences, and wrote in an informal personal style in which she referenced places (Century 16, a local movie theatre) and people (Claudia and Walter, friends still at Stanford) without explanation.

However, the same post immediately continued:

Speaking of--good luck on your finals, everyone! I was mentioning this to Walter, and maybe it's a little creepy, but whenever I think of things that are bad, I just think of this quote from Dietrich Bonhoeffer's Letters and Papers from Prison --when he moved into his cell in Tegel Prison in 1943, he noticed that someone had written on the wall, 'In 100 years it will all be over'. How true--in 100 years, all of this, all our lives and hopes and dreams and sorrows and triumphs and losses will, for better or worse, be over. Put it that way, and finals are nothing, when there are so many other things out there to think and experience and do before the end.

The post shifted, in a single sentence, to a salutation to Lara's friends in the midst of finals. Good luck, everyone! She continued with philosophical musings on the importance of finals in the grand scheme of things. The mention of Bonhoeffer would be well understood by her friends reading the blog because they knew that her senior thesis was on Bonhoeffer. The blogger drew closer to her audience in mentioning that she had already discussed the quote from Bonhoeffer with Walter, a mutual friend.

This post, then, was a direct address to specific friends taking finals, with the delivery of some hard won advice from one-who-has-been-there. The post made clear that the blogger missed her friends, with the implication—a kind of invitation—that she would like to see them when they weren't busy with finals. Salutations, advice giving, and invitations are unambiguously social actions; they would not occur in a diary.

In this paper we discuss various forms of social activity enacted through blogging. We document the ways in which bloggers reached out to connect with and insert themselves into the social space of others in their personal social networks. We discuss blogging as a broadcast medium of limited interactivity. Bloggers desired readers, but wanted controlled interaction, not the fast-paced give-and-take of face to face or media such as instant messaging. We analyze bloggers' relationships to their audience: people in the blogger's known personal social network, and the larger blogosphere of unknown readers. We suggest design recommendations for blogging software.

## 2. METHODS AND SAMPLE

We conducted audiotaped ethnographic interviews with bloggers and text analysis of blog posts. We maintained our own blog to discuss the research and become familiar with blogging ourselves. Interviews were conducted between April and June 2003, inclusive, most in person, some over the phone. The interviews were conversational in style but all covered a fixed set of questions about informants' blogs, blogging habits, thoughts on blogging, and use of other communication media including instant messaging, email, phone, and webpages. Most informants were interviewed at least twice, with follow-ups in person, over the phone, via email, or in instant messaging. We have continued to read informants' blogs and to exchange email with some of them. Twenty-three people (sixteen men and seven women), ranging in age from 19–60, participated in the research. The sample consisted of European-Americans, Asian-Americans, Latinos, and

one European. All lived in California or New York. Ten informants were current Stanford undergraduate or graduate students. Others were students and graduates of American universities and one European university. All informants were well-educated, middle-class people either in school or employed in knowledge work or artistic pursuits. We developed the sample by finding blogs hosted in the vicinity of our locality, Stanford University, so that we could interview informants in person. We searched Google's Stanford University portal (<http://www.google.com/univ/stanford/>) for the words "blog" and "Weblog," creating an initial list of Stanford-hosted blogs. We also contacted a small number of bloggers we knew personally. We then "snowballed" the sample, asking each informant about other bloggers with whom we might speak. Pseudonyms are used when discussing specific informants. We received permission for blog text and images used in this paper. Orthography and punctuation of posts are preserved, though we could not preserve fonts and spacing within the confines of a short paper. Underlining indicates a link in a blog entry.

## 3. PREVIOUS RESEARCH

Blogging is a relatively new form of Internet communication, and scholarly research is not yet extensive. However, interesting studies have been published or soon will be. Herring et al. [7] reported a quantitative analysis of 203 randomly selected blogs, focusing on blog author characteristics, reasons for blogging, frequency of posts, usage of blog features, and frequency of commenting. Cohen [2] and McDonald and Towle [10] conducted empirical studies of photoblogs. Krishnamurthy analyzed blog posts regarding September 11 [8]. Halavais discussed methodological issues in text analyses of 125 randomly selected blogs [6]. Our publications analyzed reasons why people blog and how relationships with readers are managed [5,13,15].

## 4. RESULTS

### 4.1 Blogging Practices

Several blogging software packages, some free, some commercial, are available for easy download. This software can be used for purposes other than blogging, such as homepages, although we did not investigate those uses. Our informants used a range of systems including Blogger, MovableType, Xanga, Radio UserLand, and Blurty. Three informants wrote their blogs directly in HTML because they preferred more control over formatting. Some informants had started on Blogger and upgraded to MovableType, a more powerful system. Some used only the most basic features of the blogging software; others used more advanced features to track who was reading their blog, to collect statistics on the number of hits they received, to discover who linked to their blogs, to change the format of the blog, or to post photos. One informant used his own software to include his location and current MP3 selection on each post. During the course of the research several people moved to the use of more advanced features as their blogging activities developed. Two informants wrote Perl scripts to add photos and track visitors.

Blogging software allows three levels of privacy. The most private blog is password-protected. The most public blog is listed by the user's blog service and will be easily found by search engines. An unlisted blog is less likely to be found but is not fully private; it is unlisted by the blogging service's directory (similar to an unlisted phone number). Such a blog cannot be found without knowing the

URL, although there is a way such blogs can become public. If the blog contains a link that someone clicks on, the new webpage will receive the URL as the “referrer,” and it is possible for the “unlisted” blog to be picked up by search engines. Since most blogs contain links that anyone might click on, unlisted blogs are not secure, although they may remain relatively invisible if they link to sites that few people access and if the links are not activated often. Our sample contained blogs at each level of privacy.

Some blogging software allows comments on each post. The amount of commenting varies, with hundreds of comments on widely read blogs such as those of well-known pundits, to no or minimal commenting on personal blogs read by a few friends [7].

In our study, people typically found blogs through other blogs they were reading, through friends or colleagues telling them about their blogs or those of others, or through inclusion of the blog URL in an instant message profile or a homepage. Blogging software reserves a portion of the screen for lists of blogs and many of the blogs we investigated had a list of other blogs presented to readers. There are also sites devoted to “blogrolling” which select and present interesting blogs.

Some of our informants posted multiple times a day; others posted as little as once a month. Sometimes bloggers poured out their feelings or ideas; other times they struggled to find something to say. One of our informants stopped blogging when he inadvertently hurt the feelings of a friend he had mentioned in his blog. He took down his blog and then put up another. However, he decided against “advertising” the URL in his AOL Instant Messenger profile, as he had been doing previously. Other bloggers experienced “blog burnout” and stopped blogging for long or short periods.

Even in our small sample, we found tremendous diversity in blog content. On the serious side, one of our informants, a graduate student in genetics, regularly posted well-written commentaries on science and health, covering topics such as AIDS, heart disease, the genetics of race and gender, science education, and healthcare policy. On the quotidian end of the scale, bloggers posted on mundane activities, updating friends and family on everyday events such as the following:

Sunday, February 01, 2004

Off tomorrow to Massachusetts, home of your Super Bowl champion New England Patriots . (But--sorry Jim --I won't be anywhere near Boston.) I'll trust you all to hold down the fort until Friday.

## 4.2 Blogs as Social Activity

Our emphasis on blogs as social activity stems from interviews in which bloggers reported how and why they had started their blogs, why they continued them (if they did), and how their blogging habits changed over time. We learned that blogs create the audience, but the audience also creates the blog. This linkage happened in a number of ways: friends urging friends to blog, readers letting bloggers know they were waiting for posts, bloggers crafting posts with their audience in mind, and bloggers continuing discussions with readers in other media outside the blog. In this section, we establish blogs as social activity, a form of social communication in which blogger and audience are intimately related through the writing and reading of blogs.

We first began to get a sense of the deeply social nature of blogs when we learned that several bloggers started blogs in response to requests from friends. About 20% of the bloggers in our study said they started blogging because others asked them to. While this is clearly a minority, it is a rather large percentage of bloggers who did not initiate their own blog, but began in response to a direct social request. It would be peculiar to suggest to someone that they start a private diary!

Bloggers who started their own blogs reported that they gained momentum when they realized others were actually reading their posts. Tammy, a young biostatistician, said she “found my voice” as she discovered that people were reading her blog. “I had this voice that I didn’t realize I had until people told me they were reading my blog,” she said. Tammy encouraged a friend to blog:

A friend of mine, I’ve been encouraging her to create a blog because I think her voice is funny, just in email and other stuff. I think she’s funny and I was like, “You know, I would read a blog if you wrote one.”

Another blogger, Harriet, urged her friend Katie to start a blog and taunted Katie that she wasn’t a “real blogger” when she did not post frequently. Both were graduate students in electrical engineering and avidly read each other’s blogs. So blogging begets blogging. Or rather, bloggers and readers together beget the social activity of blogging.

Bloggers reported that they sometimes got tired of blogging. They often continued to blog through low-energy periods so as not to disappoint their audience. Dirk, a Stanford undergraduate said,

Even if it only takes you ten minutes, yeah, I try to say, “Okay, right before I go to bed, I’m gonna type something out,” and then it’s like, “Well, I’m feeling tired now, I’ll just do that another day,” and then you just fall asleep...and then you’re just sitting there saying, “Yeah this blog is kinda sucky.” Your friends like look at it and they’re like, “What the hell happened to your blog? I can’t follow along with what’s happening in your life!”

Others changed the kinds of things they blogged about in response to audience feedback or calibrated what they said very carefully. An untenured professor said he would not put anything political on his blog. He thought he might start another blog with a pseudonym while maintaining his current blog on uncontroversial topics. Tammy noted that she liked to “poke,” but not overly rile, her Republican uncle who read her blog. Max, a musician in New York, said he used “euphemisms” on his blog to avoid hurting others’ feelings. Dirk said he used private entries (which others could not access) when he felt the need to “say something bad” about someone. His public entries were kept “clean.”

One blogger, Ken, an undergraduate, had posted in his blog, “If no one read my blog, that would be nice.” We asked him about that post in the interview. “Well,” he teased, “If no one read my blog, people wouldn’t ask me to do ethnographic studies!” He continued:

Seriously, I guess this is the difference between a blog and a private journal. With a private journal, it’s not read [by others]. But with the blog, it’s published instantly...it becomes a little...more self-aware. Sometimes I have to *not* say something. But I guess I don’t *really* mean that [I don’t want anyone to read it] because then I wouldn’t have it online...If I weren’t posting it online, I’d stop writing it—other people are reading it, so they bug me if I don’t post.

Readers create blogs as much as writers.

Most informants in our study reported that they often continued discussions of blog topics in other media including instant messaging, phone, and email, as well as face to face. Sometimes these exchanges involved delicate topics in which feelings could easily be hurt. For example, a discussion of racial stereotyping took place across blog posts and email. Jack, a poet and graduate student at Stanford, maintained a blog on poetry and politics, and was a regular reader of a number of poetry blogs. Another blogger, Darryl, reviewed a poetry book on his blog and wrote, "The more quiet, modest modes of Asian poetry appeal as an alternative to our overblown emotions."

Jack, an Asian-American, believed this statement put forward an unwelcome and inaccurate stereotype of Asians. Jack sent Darryl an email questioning the stereotype, but did not mention his concern on his blog. Darryl, however, found the email-only communication uncomfortable and hoped that Jack would post something on his blog. Jack then posted:

It seems silence might have been more troubling than overblown emotions—Darryl wrote me [in email] hoping I would clarify. So, donning my scholar's robes, I will proceed to an explication of silence... My initial objection was to a line in the review of Gary Sullivan's "How to Proceed in the Arts" that Darryl posted on Monday. In his remarks on the section "70 Lines from the Chinese," Darryl wrote: "The more quiet, modest modes of Asian poetry appeal as an alternative to our overblown emotions."

My immediate response was that this assertion perpetuates a common stereotype of Asian reserve, modesty, and deference, one that while seemingly innocent enough, can have repressive implications, suggesting that the East is less capable of speaking for itself than the West...I should say that this reaction is not a literary judgment based on my familiarity with Chinese poetry, of which I know very little; rather, it was a reaction against an orientalist stereotype that has real implications for how Asians are perceived in America.

A complex set of interactions across blog and email took place. A discussion of race—always a potentially inflammatory topic in the United States—was handled by first discussing the blog post privately in email, and then, when emotions had had time to settle and clarifications had been made, Jack posting a tactful but forceful response on his blog.

Blogs then, are a studied minuet between blogger and audience. Bloggers consider audience attention, feedback, and feelings as they write. While bloggers do not always judge their audiences correctly, and may inadvertently write inappropriate or injurious posts, consciousness of audience is central to the blogging experience. Jack used the following epigraph on his blog title: "Jack Yang on poetry, politics, and whatever else may happen to slip out." As a poet, Jack was unusually conscious of the effects of writing on others, but he playfully admitted that even with such awareness, things do "slip out."

That blogs are part of larger arenas of social activity was evident in the way blogging extended social interaction into other forms of communication. Such extensions also characterize instant messaging [12] and other media. The blog is not a closed world, but part of a larger communication space in which diverse media, and face to face communication, may be brought to bear. Blogs, then, are unlike private diaries, being completely social in nature.

### 4.3 Object-oriented Activity in Blogging

If blogs are not online diaries or journals, what are they? To answer that question, we followed the lead of activity theory which suggests analysis of the *objects* motivating human activity [9,18]. For example, Lara, the blogger we introduced above, explained in her interview that she was motivated to blog by her desire to stay in close touch with friends, to say things in the blog she would not say to friends face to face, and to "work through" emotional issues. Lara kept a separate paper diary with material she did not want anyone else to read; the blog was meant to be read by others. In activity theory, an object embodies a motive answering a need or desire, and some physical manifestation of a person's efforts to enact the motive. Blogs are a manifestation of diverse social motives, in which the inscriptions in the blog communicate specific social purposes to others. In this section we describe objects that connected bloggers to their own, known social networks. Later we will describe a relationship to larger audiences beyond the blogger's set of friends or family.

Several objects motivated blogging in our sample. Bloggers blogged in order to:

1. Update others on activities and whereabouts
2. Express opinions to influence others
3. Seek others' opinions and feedback
4. "Think by writing"
5. Release emotional tension

These objects were not mutually exclusive; some blogs were motivated by more than one. Blogs are of course not restricted to these objects, but these particular objects characterized our sample.

#### 4.3.1 Updating Others on Activities and Whereabouts

Blogs were used by many of our informants as a record of events in their lives for themselves and others. Lara described the content of some of her posts as "things I'd like to update friends about." Tammy, a biostatistician, used her blog

kind of as a journal...just to keep people updated. Like, there's a lot of people from college or whatever that I don't keep in touch with very well.

Within blog postings, Tammy included links to photos and relevant websites in order to flesh out her entries. Three informants started blogging after purchasing digital cameras, creating "photo album" blogs. Harriet began a blog to "document my life," for family and friends back home in Iceland. Her fellow graduate students at Stanford also enjoyed it, though sometimes she had to translate the Icelandic! Harriet blogged not only to document her own life, but also that of her family, including the newest member, still in utero. Harriet noted that in Iceland, blogs serving as "baby books" were steadily increasing in popularity because of free software offered to new parents, many of whom were eagerly taking advantage of the opportunity.

Michael, a computer science researcher, maintained what he called a "photographic blog" of the activities of his son, Kevin:

[The blog is] a way to dump a whole bunch of stuff...mostly time organized...on what [Kevin]'s been doing. Not updated daily or hourly, like a lot of blogs are. But functions in the same way...lets friends and family know what we've been doing.

Similarly, Alan, a historian of science, had a private, password-protected blog (a family-only blog, in addition to his public one), which primarily contained photos of his family activities, especially those of his young daughters. Such continuing chronicles (often including photos) served to update others of the events in the blogger's life, maintaining and strengthening social bonds in the process.

Don, a technology consultant, called blogs "be-logs" because he believed blogging was used to "log your being." This "log of being" took a serious turn for Don when his wife became gravely ill and nearly died. During her illness, Don posted blogs to document her health condition through text and photos. He found blogging to be an important way to communicate with others:

[Blogging is helpful] when people's lives are compromised in some way...when [my wife] was sick, [I] was going through [the] hospital with the lens of how can I share this with others?

Similarly, Katie viewed blogs as "personal journals" and as a means of relating her life to others by telling her continuing story in close to "real-time." Even people such as Evan, whose blog was primarily about scientific subjects, used the blog to let his friends know of his whereabouts, or to report when he had a cold or some other minor disturbance in his life. A number of people, such as Arthur, a Stanford professor, found blogging a superior alternative to sending out mass emails:

[I started blogging] to communicate with friends and family, as well as [for] professional connections. It's easier than sending lots of email—"I'll just put it on my blog." It's a way to take care of mass email, rant, speculate...

As a format of frequent postings in reverse chronological order, blogs were a natural for use as travelogues and schedules to inform an audience of the authors' whereabouts—where they'd been, where they were, and where they were going. Many in our study posted pictures from trips and family outings. They would also report on where they were headed, especially if they knew family and friends living in that area, in order to get together with them. In this way, blogs facilitated in-person social connections. For Max, a musician in New York, the updating function of blogs was central to his social life:

[I read my best friends' blogs] not because I wanna...know what's going on in their heads, usually I wanna know—where they're gonna be or what's going on, you know, on any given night or like what happened—if I happen to not go out with them one night. It's usually just, you know, to check up on social events.

Blogging was a useful, efficient way to keep in touch with others, to insert the blogger into a social space of friends and family—some very remote—to facilitate ongoing social relationships.

### 4.3.2 *Expressing Opinions to Influence Others*

Some bloggers wrote opinion pieces to share their ideas and influence others. For example, Vivian, an attorney, and politically aware citizen, wanted her readers to educate themselves about atrocities in Uganda:

Amazing is the story of Uganda's civil war that I heard last night on NPR. One of many rebel armies fighting against the single party government is the Lord's Resistance Movement, "best known for its abduction of thousands of Acholi Ugandan children to serve as involuntary soldiers and, in the case of girls, "wives" or concubines

for the LRA officers. Extreme brutality is used to keep the children in line, including torture and forcing children to participate in the killing of other children who try to escape." See [HRW report](#). For more information about the country, and the political economy behind this bizarre religious and social tale, you can read [here](#).

Evan, a graduate student in genetics at Stanford, read and digested several science-related online publications nearly every day. He posted and commented on what he found interesting:

**February 16, 2004**

### "Traditional" Agriculture

ScienceDaily News Release: Traditional Iroquois Methods Work For Today's Farmers

Blah blah blah. The fact that we don't put enough money into ecology research has nothing to do with philosophical differences between Western science and Native American mysticism. We don't study ecology because the Republicans control Congress and they don't believe in global warming.

Evan sometimes suggested specific actions he believed his readers should take:

### Shower Curtain Microbiology

Biohazard lurks in bathrooms: Shower curtains awash with potentially harmful bacteria.

Wash your shower curtain every couple weeks. Otherwise, you'll be showering with a cloud of opportunistic pathogens.

Likewise, you should store kitchen sponges in a cup of weak bleach solution. Store your tooth brushes in mouthwash or the like.

Bloggers used their blogs to express opinions and advice, often with a clear statement of particular actions they wished their readers to take. These actions might include anything from linking to another website to storing your toothbrush in mouthwash!

### 4.3.3 *Seeking Others' Opinions and Feedback*

Joe, an undergraduate, began discussing his reasons for blogging by mentioning the technical advantage of typing, but moved, a little hesitantly, but very clearly, to the importance of audience opinion.

Why do I blog? Usually you get a pen and pencil and write it down. [Blogging is] more efficient I guess, and more convenient. And you can also sometimes, I guess, look for audience as well sometimes. Like, sometimes when you write, you want people's opinion on it and what they feel about it and stuff.

Bloggers often sought feedback from their readers. When we first interviewed Jack, he was not publishing his own poems on his blog. He felt the poems deserved a more formal venue. But a few months later, he wrote to us (in an email message):

I'd hit a bit of a rut with the blog, feeling as if I was crafting these long pieces that no one was really responding to, and that others who were producing much shorter, impressionistic pieces were getting more attention. I decided to loosen up a bit, which in part meant lowering my resistance to putting my own poems up.

I...discovered that allowing myself to post poems was helping me write poems, since I could think of it as material for the blog to be immediately posted, as opposed to being stowed in a drawer somewhere.

Jack was feeling that his blog in general was not stimulating the feedback he desired, and that his poems could do with more exposure (outside “a drawer”). He killed two birds with one stone by beginning to post poems on the blog, seeking more response from his audience.

#### 4.3.4 “Thinking by Writing”

A number of informants said they used the blog to work through the writing process. Alan, a historian of science, explained that once having started a blog, it “forced” him to keep writing, a discipline he deemed important for his work. “I am one of those people for whom writing and thinking are basically synonymous,” he observed. Having an audience stimulated or “forced” him to write and thus to think. While “thinking” might seem a solitary activity, or one not quite social, in blogging the presence of the audience and the writer’s consciousness of the audience clearly introduce the social into an individual’s thought process (as Vygotsky argued, more generally, seventy years ago [18]). “Thinking by writing” embeds cognition in a social matrix in which the blog is a bridge to others for getting explicit feedback, but also a means by which to regulate one’s own behavior (writing) through connecting with an audience.

Evan called blogging “thinking by writing.” In writing blog posts, he could see if he had anything interesting to say about what he had been reading. He asked his wife to read the blog every day so he could “expound” upon the points raised. Writing was a social process in that he posted his thoughts to the blog where he had an audience, and continued the discussion face to face with his wife, after she had had a chance to read the blog.

We also saw with Jack that “allowing myself to post poems was helping me write poems.” The writing and posting to an audience fed back on each other so that the thinking needed to write the poems was “helped” by the posting of the poems.

#### 4.3.5 Release of Emotional Tension

Some of the blog posts in our study were highly emotional. While we cannot say with certainty that they afforded release of emotional tension, we can say that bloggers sometimes spoke of blogging in terms that suggested such release. Tammy blogged because, “I just needed to, like, get it out there.” Another said he blogged to “let off steam.” Some bloggers used the word “outlet” to describe blogging. Others said that blogging supported the working out of “issues” that they felt “obsessive” or “passionate” about. Vivian entitled her blog “Shout,” and noted that she needed a place to freely express herself. Lara said she could “get closure out of writing.”

However, even the release of emotional tension in blogs took place with the same attention to audience and communication as other motives for blogging. It was the release of emotional tension *with an audience* that was especially powerful for bloggers.

Lara posted the following:

10 February 2004

that’s when i know i have to get out ‘cause i have been there before. there is absolutely nothing i can say right now that will express everything i’m feeling, the depth of my emotion, the maelstrom of dark thoughts. i’m beyond miserable, and i’m looking into myself and seeing a void where everything i liked once lived. i’m not even that concerned with current events; the misery i’m feeling now is

older, deeping, pouring out from wounds that i thought had healed but that are so integral to my self-consciousness now that i can’t help but rip them open whenever things go wrong. i’m not even sad that I’m sad right now—i’m sad that i’m still going to be sad three months from now, and that nothing will have changed. 1:14 a.m.

This alarming post appears deeply self-absorbed, hermetic, depressed. Even so, the spelling and grammar are perfect, apart from the non-standard capitalization (uncharacteristic of Lara’s blog and probably intended to draw attention to her extreme frame of mind). A few days later, Lara posted:

14 February 2004

hey ya!

It’s been a very strange week, kids – and no, I wasn’t suicidal, despite my rather depressed previous entries, but I appreciate the fact that Tina almost called the Bridge for me.. Um, yeah. For those of you who played online mafia with me this week, you may recognize this style of post—the main point is in bold, with exposition after. Don’t expect any iambic pentameter, though...12:49 a.m.

Lara’s loyal friends were reading the blog (as she knew they would be), and one almost called the crisis hotline. Lara reassured her friends that she was OK, and threw in some self-parody about her writing style.

Jack posted on a painful experience he had in college:

I remember one workshop during my freshman year where at the end of the class we were each supposed to read something we liked. A lot of what I’d read in high school was Romantic poetry, so I picked Shelley’s “Ode to the West Wind.” The other students all got these funny looks on their faces, as if I’d put on a particularly embarrassing outfit, and even the instructor pronounced it “indulgent.” The person who read after me—the son, I later discovered, of a famous English professor—read Frank O’Hara’s “Why I Am Not a Painter” and they loved it—it was a perfect riposte to my poor taste. I didn’t even know who O’Hara was. Bishop, Plath, and Lowell were all people I had to discover in college. I couldn’t talk about myself with that weird combination of ego and modesty that seemed required; I was either too much there or not there at all.

The post is confessional, but clearly aimed at the specific audience of Jack’s poetry friends who will understand the poets he is referring to, and, more importantly, the politics of poetry that could cause an instructor to belittle a student’s choice of poem in so public a forum.

Blogs, then, can serve many social purposes. There is really no limit to such purposes, though in our sample they clustered around the forms of object-oriented activity we have reported. We now turn to a discussion of our finding that bloggers, while deeply in tune with their audience, desired to keep that audience at arm’s length. Interactivity was valued, but only in controlled small doses.

## 4.4 Limited Interactivity in Blogging

The relationship between blogger and reader was markedly asymmetrical. Bloggers wanted readers but they did not necessarily want to hear a lot from those readers. Even in community-oriented group blogs in our sample, (the poetry bloggers, a political blog, and a writing class blog), intimate, rapid give-and-take was not desired. Jack, who liked to know people

were reading his blog and enjoyed discussing his posts in other media, compared the relatively restrained arena of blogging to more interactive listservs, where “rage and invective” were not unusual. He attributed the civility of blogs to the fact that the blogger is not talking “directly to someone” as in a listserv, but has a more generalized audience of readers who may or may not read a particular post and who have only limited comment facilities for responding within the blog. Many bloggers liked that they could be less responsive with blogging than they could in email, instant messaging, phone, or face to face communication. They seemed to be holding their readers at arm’s length.

Though comment facilities are important, comments are typically not immediately visible on the blog and must be opened up to be viewed. Visually and rhetorically, comments are behind the scenes. As Ron, a teacher who used blogs in his writing class at Stanford, said, “Blog comments are allowed and encouraged, but they’re also very clearly rhetorically subservient, you know, to the main post.” Quantitative analysis of blog comments by Herring et al. showed that the modal number of comments on an individual blog post in their sample was zero [7].

In our sample, bloggers often received feedback about their blog through channels outside the blog such as face to face communication or instant messaging. By the time such communications take place, the interactions are less intense simply because time has passed and the immediacy of interaction is reduced. Emotion is tempered due to lack of cotemporality, as theorized in Clark and Brennan [1]. For our bloggers, the blog was almost a kind of preserve, a refuge from the intense interaction of other forms of communication.

Some bloggers used the limited interactivity of blogs to say things to others they would not say to their face. Max said:

[If] there’s something that I want, you know, a specific person who’d be reading [the blog] to see like, you know, I feel like I can say something in the blog and then have it be sort of be like my safety net, you know? Whereas like in a more immediate and personal like form of ...digital communication ...I would sort of have to face their reaction, you know? Metaphorically speaking, anyway...two bad things that blogging for me, anyway, endorses, [are] laziness and cowardice.

Bloggers can hide behind their blogs to the point of self-attributed cowardice! Lara noted that being somewhat introverted, she was “too closed to tell people in person that I’m having a bad day, but at some level I want them to know.” The blog “takes away the pressure” of having to tell people how she’s doing—“I like attention but I don’t like being really personal.” Lara further noted that in her group of friends, she was supposed to be the funny, supportive one, but she also sometimes felt unhappy. It disappointed her that often she was being supportive of others but they were not necessarily supportive back. Blogging helped; she got her feelings out and she knew her friends read her posts because they mentioned them in instant messaging, in conversation, and on the phone.

Max, like Lara, sometimes found it easier to communicate through his blog than in other ways: “[Y]ou know, sometimes something will happen and I’ll feel a need to vent about it...I dunno, sometimes it’s just easier to just write down in a blog than it is to talk to someone about it.” In this way, bloggers were free of conversational partners’ reactions to what they said, though there

was still an audience listening, which they desired. And bloggers did not have to deal with interruptions to the flow of writing. Jack compared a blog post to a “monologue” in which “other voices don’t intrude.” Vivian said that she could express herself freely, without intrusion. Katie said she did not like having other people post comments on her site, because she could not control what they would say. She thought of comments as a “responsibility” she did not want. And many bloggers liked giving advice—a plainly social activity, but one which is not reciprocal. The advice giver dispenses his or her wisdom and is not seeking extensive feedback. So Evan told us how to store our toothbrushes, Lara provided philosophical counsel to undergraduates, Vivian suggested we learn about human rights abuses in Uganda.

In our sample, bloggers wanted to express themselves without the “threat” of immediate feedback. When feedback came, it was often in other media, after time had passed. Blog comments were infrequent and often said very little. Lara remarked that comments on her posts did not interest her because they were usually something “inane” like “Lara rocks!” Blogs, then, were largely a broadcast medium, but one in which interactions related to blog posts sometimes took place in other media. Such interactions were moderated by being asynchronous [1] and allowed for more “reflection,” as Jack noted. Bloggers engaged their audience but found ways to control interaction so that it was infrequent and less emotional, more reflective, than in other more interactive media or face to face communication.

## 4.5 “The Large Unwashed Denizens of the Web”

We have described social activities enacted through blogging, focusing on communications within the blogger’s personal social network. We return now to the question of posting diaries on the Internet. While we have been debunking the idea of blog-as-diary, the second part of the question, about the Internet, is still in play. Bloggers are not posting their diaries on the Internet, but they *are* posting on the Internet. In theory, about 900 million people (if current estimates of Internet connectivity [14] are correct) could read any blog that is not password protected. How did bloggers in our study feel about this?

Responses varied. A common response was indifference. Some bloggers felt that the larger world of Internet readers would not be interested in their blog, so those readers were irrelevant. Other bloggers hoped that new readers would discover their blog, and checked Sitemeters and logs to see who was reading. They yearned to develop an audience beyond their personal social network. The occasional email from a stranger who responded to the blog was often satisfying and motivating. In our sample there were no incidents of unwelcome attentions from unknown readers, though in one interview we heard about such an incident on someone else’s blog. Except for password protection, there is nothing in blogging software to prevent such occurrences. The world of readers beyond the personal social network may, then, be uninteresting, alluring, or potentially unpleasant.

In general, the bloggers in our sample seemed fairly unconcerned about privacy. Only one had a private, password-protected blog containing information about and photos of his young daughters, targeted exclusively for family and friends. He also had a public blog. Even in public blogs, most bloggers have the option of

designating specific posts as private. This appeared to have been done very rarely in our sample.

As Michael, a computer scientist with a photographic blog of his young son's life, said, "A lot what's [in blogs] is pretty boring drivel...But [in my blog] it's *my* drivel!" He added:

This [blog] isn't private, in part because it's easier...But I guess I believe in the large unwashed denizens of the web. You know, there are these incredibly personal pages on the web, but who the hell cares? I'm doing it for myself and my friends...So I'm not really concerned.

This sense of openness was surprisingly common, even in sophisticated users. Some chose to reveal very personal information. Katie said she didn't mind publicly "letting go" or "putting out" her personal posts. She observed:

I am what I am, and I'm comfortable with who I am...Blogging is about yourself, unlike avatars or other digital identities.

Michael, Katie, and several others occasionally checked to see who read their blogs, and both had received infrequent messages from people they didn't know regarding something in one of their posts. In general, their experiences were good; no one reported real problems or concerns. Katie acknowledged that as blogging becomes more widespread, privacy-related difficulties might arise. But she expressed confidence that "society" would eventually evolve "rules" to ensure appropriate behavior. Many of the blogs in our sample provided accurate identity and even contact information, often through links to the author's home page. A similar tendency to reveal this sort of information in blogs was reported by Herring et al. [7].

In comparing diaries and blogs, Jack noted that a diary is not "turned out to the world." With a blog, he said, "You are writing for a potentially infinitely large audience." This prospect motivated him and he liked the idea that, "At some random terminal somewhere" someone might read his blog. Though technically unsophisticated, Jack learned to use the Sitemeter tool to collect statistics about visits to his blog and he checked it often.

Lara, comparing diaries and blogs, said that with a diary there's "no interaction" and "it won't change my life." With a blog, there is the possibility of "life-altering exchanges" with others and the intrigue of the potential for a wide audience beyond one's friends.

So, bloggers may ignore potential readers outside their personal social network, in the belief that they themselves are being ignored (which is fine with them). Or they may hope to reach out to a larger set of readers, one which could be "infinitely large." As with other aspects of blogging, relationships to the larger blogosphere varied depending on the bloggers' object-oriented activity of blogging.

## 5. DESIGN RECOMMENDATIONS

In this section, we suggest implications of our research for improving the design and usefulness of blogging systems.

### 5.1 Integrating Text-Based Media and Tools

Blogging is a form of online communication related to, yet distinct from, other text-based online media such as instant messaging, chat, email, and newsgroups. Our informants actively selected among and switched between these media. They also re-used content from one medium in another, such as cutting text from a blog to send in an email. Creating ways to facilitate media

selection and switching for specific messages—in effect, providing an integrated palette of text-based communication tools—would be very useful for bloggers. For example, toolbar icons might be used to allow switching between blogging, email, and IM. In a related vein, the Google toolbar's "Blog This" icon lets users post URLs (and some text) on Blogger. Similarly, Xanga Premium currently allows direct emailing of blog posts.

Our informants' interest in re-purposing text suggests the value of integrating document editing tools (e.g., spell-checking and enhanced formatting and editing features) with blogging applications. Xanga Premium has some of these features, but most others do not. A related issue concerns document management, especially attaching a document file to a blog post, as in email, or importing and exporting to document files. This issue came home to the authors when we tried to share extensive field notes via our class blog. The notes were created as Word documents on our personal computers, and we found it easier to share them as files attached to group emails rather than in blog posts. Uploading files to web servers and posting the URLs was inconvenient for most of us and impossible for others (those without webserver access). Posting the contents of large files is an awkward process, and makes the blog difficult to read and comprehend. Moreover, re-use of the material for further analyses, revisions or for inclusion in a paper is currently much easier when the notes are stored as independent documents.

### 5.2 Photoware

Posting photographs in blogs was of strong interest to many in our study, especially those blogging to "document my life" and update others. Most informants posted at least some photos, or expressed a desire to do so. Some blogs (e.g., Michael's photoblog, Alan's family blog) are essentially photo albums with captions. The prototypical photoblogs are "baby blogs" and "travel blogs." Katie, and for a time, Harriet, struggled with maintaining and synchronizing two "document my life" blogs, one text-only and the other photos with captions. Each had a digital camera and webserver, and had tried various methods to manage their ever-increasing number of photos. They attempted to use independently-purchased software (e.g., Trellix) and customized scripts written in Perl or Java. None of these solutions was especially satisfying. Some informants even asked us for tips on tools to aid them in their managing photos!

Dealing with digital photos is currently a major design challenge. New "photoware" products are emerging (e.g., Adobe's Photoshop Album) to aid the still-cumbersome process of digital photo management. Adding the requirement of working on both the Web and one's home computer compounds the problem and the need for better solutions. As of this writing, Blogger permits free posting of only one low-resolution picture; a fee is required for more photos, since they must be stored on the Blogger server. Xanga Premium allows for 20 MB of image hosting. None of our informants was willing to pay for this service, but most had other alternatives. They hosted photos themselves, posted links to photo services or chose not to include photos in their blog. Providing tools to seamlessly support working with large volumes of photos both on- and off-line is a critical photoblog design challenge and potential business opportunity (e.g., through integration with such digital photo services as Ofoto or Shutterfly).



### 5.3 Browsing and Search

Most blogs are organized chronologically, making time-based browsing especially easy. However finding specific information using other indices can be difficult. Some applications, like Blogger, allow titles for posts; a few others, such as Moveable Type, also permit specification of a topic category and/or keywords for post contents. Being able to sort or search by category can be very helpful for the reader browsing or searching for specific kinds of information, but of course, this ease comes at the expense of the writer who must provide the categories and keywords. Browsing and search can take place within current posts or in archives in most blogging applications. Blog archives may be organized chronologically (most commonly, monthly) or in some cases, by category. These archives can be inflexible; for example, in some cases, archived posts can be accessed and stored either chronologically or by category, but not in both ways. And sometimes information can be lost in the archiving process. For example, titles are often lost when Blogger archives posts. Finally, while search engines may retrieve information from all public sources on the Web, including blogs, it might also be useful to be able to customize search to restrict it to blogs only, as a domain or document type. Google has made progress along these lines for Blogger, but at this point it is not possible to specifically search across blogs hosted by different companies using the various blogging software applications.

### 5.4 Audience Specificity and Privacy

Knowing one's audience is critical to blogging, as we have seen. Some blogging systems include or allow "trackback" features, to identify visitors and how they arrived at the site (e.g., via a search engine or from a link on another's website). Several informants found this useful; many others might if this sort of feature were easier to access and use. In addition, while many blogs allow specific posts to be designated as "private", blog- or post-distribution could be further refined, with specific include-, exclude- or "buddy" group lists such as those used in instant messaging and email. Xanga Premium currently includes a "user blocking" feature, which prevents other specific users from leaving comments on one's posts, not from reading them. Blogger Pro should have a similar function soon. Improving "talkback," or comment-posting tools would facilitate communication between, and perhaps among, blog writers and readers. Many of our informants wanted comments on their blogs, but Katie said that she did not, because it took "too much time and effort" to moderate comments. She was very concerned about how others' comments would reflect back on her. In addition, having the option to alert targeted audience members of specific posts, or even whenever a blog is updated, could be very useful. This is currently possible now only in an awkward way, since notification of updates currently requires an RSS feed and special software.

### 5.5 Collaboration

Small-group blogs with multiple authors collaborating on content have many design and use issues. Design challenges include ways to make the voice of the individual contributor stand out, while also subsuming multiple voices under a single topic. Educational and work project blogs would especially benefit from features allowing one to identify and sort posts by contributor and topic, and tools enhancing the ability to follow the thread of a particular argument, including its references, links and other "meta-data" (similar to, say, Lotus Notes). This use of blogs was emphasized

by Alicia, a director at a research institute. She also noted that a blog could be used to post administrative and scheduling information independently of content, especially for large-group or public blogs organized around a specific topic or event, such as a conference. The "Community Zero" website offers many of these features (such as showing which members of a group are online, chat, and an online photo album), but of course, at a price.

### 5.6 General Ease of Use Issues

Finally, we note some general ease-of-use issues. First, the typical post window is quite small, and not quite WYSIWYG; it is unwieldy for writing long posts. Other issues relate to website management and tool integration. For example, some of our informants tried to use their blog as their home page, but encountered thorny tool-integration issues (e.g., formatting and frames) when linking to other pages on their sites. Finally, the classic trade-off between functionality and ease-of use cannot be ignored. We have called for integrating blog functions with those of other applications, and for incorporating features available only in paid "premier" editions of select blogging systems. Yet integrating functions and features into an extant system without sacrificing ease of use is no small feat. Blogger is the most popular and easiest to use system, but also the most limited in features. Several of our informants started with Blogger, but then wanted more advanced features, and either constructed their own or migrated to more full-featured blogging applications.

## 6. DISCUSSION AND FUTURE RESEARCH

Although it is too early to definitively conceptualize blogs, our research indicates that they are a form of object-oriented communicative activity, enacting a wide variety of social purposes. Blogs are strikingly like radio, and indeed, an early blogging software package was called Radio UserLand. Just as with radio, the blogger can broadcast messages of their own choosing, without interruption. Limited feedback analogous to listener call-in on a radio station is possible with comments on blog posts. The comments remain "subservient" to the main communication in the posts, just as a talk show host or deejay dominates listeners. Blog readers read the blogs they read, intently and with great interest, but with limited means of holding any but a minimal conversation. Radio broadcasts can be about anything and everything topically, and so can blogs. Unlike radio, however, thoughts and feelings triggered by blog posts are often continued in other media. Perhaps this is attributable in our sample to the small-audience blogs we studied where most readers were in the blogger's personal social network, providing the needed personal link for continuing interaction.

It is also too early to say whether blogging is a "genre" (see [7]). While the uniform format of blogs suggests genre conventions, the extraordinarily diverse content of blog posts would seem to burst the bounds of a single genre. In a textual analysis of 125 random blogs, Halavais [6] observed, "I cannot think of another corpus that would be as eclectic as the text collected from these blogs." Our own sample was extremely diverse in content, though it covered only 23 bloggers, within a fairly uniform group of well-educated middle class people, most in and around Stanford University.

Our research leads us to speculate that blogging is as much about reading as writing, as much about listening as talking. We focused on the production of blogs, but future research is sure to pay attention to blog readers and to precisely assess the relations between blog writers and blog readers. The distinctive diary format of blogs seems more of a lure for readers than the private record of the writer it so invitingly resembles. We are reminded of the medieval chronicles of the renegade activities of the illiterate adventurer Lope de Aguirre, written by several of his men as Aguirre pillaged his way through parts of the New World. These diaristic accounts were as socially embedded as blogs, colored by the need to stay on the good side of the treacherous Aguirre, as well as by the chroniclers' notions of what would appeal to their audiences. One enticed his readers: "[Here] you will find cruelty, passion, and incidents arousing great pity" (quoted in [11]). Today's bloggers are just as conscious of the possibilities and constraints imposed by their various readers as the chroniclers of yore. Herring et al. [7] described the "hybrid" nature of blogs, suggesting their relationship to previous forms of communication. Future research will undoubtedly engage such topics more deeply than we have been able to here.

One of our key findings was the limited interactivity characteristic of the blogging experience. Perhaps we dwell in a moment in history when our interactive technologies—telephone, instant messaging, email, listservs, chat, MOOs and MUDs—have created a surfeit of interaction. Maybe blogging is happening now because we are ready as bloggers to reflect, to "think by writing," to opine, and advise. We are ready as readers to seek the "voice" that bloggers develop, without having to be in intense conversation with that voice. For now anyway, we enjoy the civility of blogs, the unwritten rules of good behavior prevalent, if not universal, in blogs, that seem so different from the "flames" of email. Maybe we are ready to hold each other at arm's length. But not to disengage. All bloggers in our sample desired connection with their audience, wanted to insert themselves into known—and sometimes unknown—social spaces to update, inform, or advise, to greet or grumble, to pontificate, confess, create, and to think. Bloggers had confidence that "society" and the "large unwashed denizens of the web" would continue to evolve blogs in positive ways. Bloggers aren't letting 900 million people read their diary, but they are standing before 900 million, sometimes in an attitude of indifference, sometimes with the hope of reaching out to new people in the ever-expanding blogosphere.

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## 8. REFERENCES

[1] Clark, H. and Brennan, S. Grounding in communication. In L. Resnick, J. Levine and S. Behrend (Eds.), *Perspectives on*

*socially shared cognition* (pp. 127-149). Washington, DC: American Psychological Association. 1991.

- [2] Cohen, K. What does the photoblog want? Submitted to *Media, Culture and Society*. 2004.
- [3] Gillmor, D. Making the News. From *E-Journal: News, Views and a Silicon Valley Diary*. April 11, 2003. <http://Weblog.siliconvalley.com/column/dangillmor/archives/000924.html>
- [4] Global Reach: <http://www.greach.com/globstats/index.php3>
- [5] Gumbrecht, M. Blogs are "Protected Space". Submitted to World Wide Web Conference, 2004.
- [6] Halavais, A. Blogs and the "social weather." Paper presented at Internet Research 3.0., Maastricht, Netherlands, 2002.
- [7] Herring, S., Scheidt, L., Bonus, S. and Wright, E. Bridging the gap: A genre analysis of weblogs. *Proceedings 37th Annual HICSS Conference*, 2004. Big Island, Hawaii.
- [8] Krishnamurthy, S. The multidimensionality of blog conversations: The virtual enactment of September 11. Paper presented at Internet Research 3.0., Maastricht, Netherlands, 2002.
- [9] Leontiev, A. *Activity, Consciousness, and Personality*. Englewood Cliffs, NJ: Prentice Hall. 1978.
- [10] McDonald, D. and Towle, J. Community through Pictures: Visual Blog Communities. Forthcoming in *Communications of the ACM*, 47, 2004.
- [11] Minta, S. (1993). *Aguirre: The Re-creation of a Sixteenth Century Journey across South America*. London: Jonathan Cape.
- [12] Nardi, B., Whittaker, S., and Bradner, E.. Interaction and Outeraction: Instant Messaging in Action. *Proceedings CSCW 2000*. (December, 2000), 79-88. New York: ACM Press.
- [13] Nardi, B., Schiano, D., Gumbrecht, M., Swartz, L. "I'm blogging this": A closer look at why people blog. Forthcoming in *Communications of the ACM*. December, 2004.
- [14] NITLE Blog Census. <http://www.blogcensus.net/?page=Home>
- [15] Schiano, D., Nardi, B., Gumbrecht, M., and Swartz, L. Blogging by the Rest of Us. Forthcoming in *Proceedings CHI 2004*. (April, 2004), Vienna.
- [16] Smith, T. Weblogging. *PBS Newshour with Jim Lehrer*. Online transcript: [http://www.pbs.org/newshour/bb/media/jan-june03/blog\\_04-28.html](http://www.pbs.org/newshour/bb/media/jan-june03/blog_04-28.html), April 23, 2003.
- [17] [www.scripting.com](http://www.scripting.com)
- [18] Vygotsky, L. *Thought and Language*. Cambridge. MIT Press. 1934/1986.