

**TreeHugging users:
Engagement in an online green community**

Alexander L. Bea

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State
University in partial fulfillment of the requirements for the degree of

Master of Arts

In

Communication

John C. Tedesco, Chair

Jenn Mackay

Stephen Prince

May 1, 2009

Blacksburg, VA

Keywords: blog, blog posts, blog comments, environment, framing, interactivity,

Internet, metacommunication, public sphere, TreeHugger

TreeHugging users: Engagement in an online green community

Alexander L. Bea

Abstract

The study of blogs up to this point has primarily, though not exclusively, covered “A-list” and political or campaign blogs. Large filter blogs have not yet been the focus of communication research and offer an exciting new area of scholarship in online communication. This study examined if and how the environmental blog, TreeHugger, works to engage and maintain the online environmental community by potentially acting an online environmental public sphere and interacting with users who make up the community.

Through a content analysis of two constructed weeks of blog posts (N=336) and their comments (N=1342) from the first half of 2008, this study examined the discussion of issues, use of interactive feature, and presence of the metacommunication frame in both groups. Results showed significant influence of topic and tone in the blog posts on the subsequent user comments. They also showed how commenters’ discussion can operate quite independently as well. In particular, comments were found to have a negative valence significantly more than the posts. Also, the focus of external metacommunication frames in each differed significantly, with posts referencing other mass media more often.

Overall, this thesis concludes that writers for blogs like TreeHugger have limited influence on the discussion in the comments. Greater understanding of that influence could help bloggers engage readers better and promote active dialogue.

Acknowledgements

I give great thanks to the Virginia Tech faculty who helped make this project possible. Thanks to Dr. John Tedesco who guided me through the execution of the research. Though the data analysis ironically took down at least a small tree, this thesis would not have been possible without him. Many thanks also to Dr. Andrew Williams who helped me develop this study and navigate through the literature while reigning me in when necessary. He has been restlessly supportive of this project and me as a developing scholar. Much thanks to my committee members Dr. Stephen Prince and Dr. Jenn Mackay. I sincerely appreciate your help joining on when I really needed it. Your comments helped me when I had trouble seeing the forest for the trees.

Thanks as well to my fellow graduate students who gave both academic advice and let me ramble on about my project when I needed a good ramble. The wide range of our personalities and interests in our group made our time enriching and benefitted my education here.

Dedications

I dedicate this thesis first to my family. Mom and Dad, you supported me through twenty-some years of education, encouraging and pushing my academic pursuits. To Paul and Meg, you have never failed to cheer me on, giving me a boost when I really needed it. And to my niece, Sofia, your picture on the fridge greeted me every morning with a smile and a wave. I can't wait to watch you grow up.

I also dedicate this thesis to my friend, John Steve. You inspire me to be a better person.

Table of Contents

I. Rationale	1
II. TreeHugger as third wave environmentalism	4
II.a Third Wave Environmentalism	4
III. Review of Literature.....	8
III.a Blogs	8
III.b Online public sphere	10
III.b.1 Public sphere	11
III.c Interactivity	14
III.c.1 Textual interactivity.....	16
III.c.2 Technical interactivity.....	20
III.d Framing.....	22
III.d.1 Defining Framing	23
III.d.2 Metacommunication.....	25
IV. Research Method	30
IV.a Sample.....	30
IV.b Coder Training and Intercoder Reliability.....	31
IV.c Coding Scheme.....	31
IV.c.1 Coding Metacommunication	33
IV.c.2 Coding Interactivity	34
V. Results.....	35

VI. Discussion	48
VI.a Limitations	70
VI.b Future study.....	70
VII. Conclusion	73
VIII. References.....	75
IX. Appendices.....	94
IX.a Tables	94
IX.b Codesheet	122
IX.c Codebook.....	139

Index of Tables

Table 1 – Category Frequencies and Percents for TreeHugger.com Blog Posts (N=336) and User-generated Blog Comments (N=1342)	94
Table 2 – Issue Frequencies and Percents for TreeHugger.com Blog Posts (N=336) and User-generated Blog Comments (N=1342)	95
Table 3.1 – Valence Frequencies and Percents for TreeHugger.com Blog Posts (N=337) and User-generated Blog Comments (N=1344)	100
Table 3.2 – Valence Frequencies and Percents for TreeHugger.com User-generated Blog Comments (N=1344) for each Blog Post Valence	101
Table 4 – Valence Frequencies and Percents for TreeHugger.com Blog Posts and User-generated Blog Comments in each TreeHugger Category.....	102
Table 5 – Valence Frequencies and Percents for TreeHugger.com Blog Posts and User-generated Blog Comments for each Issue Discussed.....	104
Table 6.1 – Frequencies and Percents of technical interactivity in TreeHugger.com Blog Posts (N=337) and User-generated Comments (N=1344).....	110
Table 6.2 – Textual interactivity Frequencies and Percents for TreeHugger.com Blog Posts (N=336) and User-generated Blog Comments (N=1345)	111
Table 6.3 – Textual Interactivity Frequencies and Percents for User-generated comments on TreeHugger.com Blog Posts featuring textual interactivity	112
Table 7.1 – Frequencies and Percentages of Individual Types of Interactivity in both TreeHugger.com Blog Posts and User-generated Blog Comments (N=1456).....	113
Table 7.2 – Technical Interactivity Type Frequencies and Percentages in TreeHugger.com Blog Posts and User-Generated Comments	115

Table 7.3 - Textual Interactivity Type Frequencies and Percentages for TreeHugger.com Blog Posts and User-generated Comments.....	116
Table 7.4 – Average Number of Comments on Blog Posts that used Each Interactive Element.....	117
Table 8 – Interactive Metacommunication Type Frequencies and Percentages for TreeHugger.com Blog Posts and User-generated Comments.....	118
Table 9– Metacommunication Frame and Metacommunication Frame Focus Frequencies and Percentages in TreeHugger.com Blog Posts and User-generated Comments.....	119
Table 10 – Specific Internal Metacommunication Frame Frequencies and Percentages for TreeHugger.com Blog Posts	120
Table 11 – Specific External Metacommunication Frame Frequencies and Percentages for TreeHugger.com Blog Posts and User-generated Comments.....	121

I. Rationale

Regardless of personal opinion, it's clear that, like hip-hop and amateur photography before them, blogs are not a passing media fad. A Pew (2008) report shows that among Americans who use the Internet, blogs are equally popular for all age groups, with a slightly higher percentage for the over 65 bracket. For better or worse, they are a prominent news source. Discussion of blogs in scholarly journals began at least in 2002 (Trufelman & Goldberg, 2002). The popularity of the medium, and related research, took off with the success of Governor Howard Dean's campaign blog in 2004 (Kerbel & Bloom, 2005), despite his lack of success in winning the Democratic nomination.

The study of blogs up to this point has primarily, though not exclusively, covered "A-list" blogs (e.g., Trammell, 2004; Trammell & Keshelashvili, 2005) and political or campaign blogs (Bichard, 2006; English & Tedesco, 2007; Lee, 2007; Reese, Rutigliano, Hyun, & Jeong, 2007; Trammell, 2006, 2007; Trammell, Williams, Postelnicu, & Landreville, 2006; Williams, Trammell, Postelnicu, Landreville, & Martin, 2005). Studying obscure blogs is rare because of methodological difficulty (Li & Walejko, 2008) though it has been done, using nonprobability sampling (Guillory, 2007; Trammell, 2004). To the researcher's knowledge, large filter blogs have not yet been the focus of communication research and offer an exciting new area of scholarship in online communication.

This study examined if and how the environmental blog TreeHugger works to engage and maintain the online environmental community. This engagement and

maintenance works on two levels: potentially acting as an online environmental public sphere and interacting with users who make up the community.

As a “filter” blog (Blood, 2002), TreeHugger gathers environmental news from websites, both obscure and popular, and directs users to those sites for more information. Filter blogs are among some of the most popular¹ as ranked by Technorati (2008b), the most prominent blog search engine, and have been established as a mainstay of the blogosphere (Blood, 2002). By understanding how users of such sites interact with the writers and each other, we can understand how such online interaction works as well as how blog editors can work to engage readers.

The aim of this thesis is to advance literature in several areas. This thesis hopes to add to framing literature, chiefly regarding the metacommunication frame, by extending its study to nonpolitical blogs as well as exploring whether framing an issue through metacommunication can be a positive thing on a medium as inherently interactive as blogs. Interactivity literature, both technical (e.g., video, polls, hyperlinks) and textual (e.g., direct address, call to action), will be studied to explore how they engage users to participate in the news framing with comments. Finally, this study aims to advance blog scholarship. Analyzing a filter blog, as well as a very active blog community, it improves our understanding of the medium and a popular blog genre. User comments are an important aspect of the medium that have been understudied and will be addressed as well.

Besides the theoretical contributions, this study aids in understanding how to establish and maintain an effective web presence, particularly within an

environmental context. It is important for organizations trying to establish a positive web presence to understand how to do so properly. As Kent (2008, p. 39) notes: “a blog will only be useful to an organization if it has someone to maintain it, someone trained in effective dialogic communication, and someone who has the trust of individuals and publics.”

This study follows in the tradition of other Internet scholarship “to help website creators discover how they can improve their online mission.” (Coleman, Lieber, Mendelson, & Kurpius, 2008). By studying how a successful weblog maintains and develops its online community through framing and interactivity, nonprofit groups can learn how to similarly engage their members and the general public with their online presence.

II. TreeHugger as third wave environmentalism

One of the purposes of this thesis is to examine if, and how, the engagement of an online community occurs on TreeHugger (www.treehugger.com), a popular environmental advocacy blog. To examine TreeHugger's engagement of users, this study analyzed several elements of the website. First, a content analysis of manifest content examined how the articles engage and discuss the website's users as well as the environmental community. A framing analysis was used to do this, focusing on the use of the metacommunication frame in the posts as well as in the reactions by users in the comment section of each post. Finally, interactive features were coded to determine whether these elements contribute to the maintenance of the online community. The discussion also addresses some features of the website not included in the official analysis.

First, discussion of "third wave" environmentalism will provide context for this thesis. A full description of the object of study will follow.

II.a Third Wave Environmentalism

With issues such as climate change and alternative energy among the most discussed on the news and campaign trails it is clear that environmentalism is alive and well. If it doesn't seem so, that might be because the movement has been diverging from the stereotypical 1970s radical hippie environmentalism for at least twenty years. An article by Fred Krupp, executive director of the Environmental Defense Fund, published by *Wall Street Journal* (1986) introduced a new third state

of the environmental movement. Whereas Krupp saw that the second stage, exemplified in the landmark environmental legislation of the late 1960s and early 1970s, focused on treating symptoms of pollution, this third stage was more directed toward “long-term solutions” to the social needs addressed by the movement (Shabecoff, 2003).

The solution-oriented nature of this stage aimed to fight the assumption that environmental conservation and economic sustainability were antithetical. Third Wave organizations and leaders became increasingly sophisticated, politically and communicatively, after huge growths in membership in the mid 1980s. Businesses also began to adopt new technologies to decrease ecological impact as the concept of sustainability connected between economic, environmental, and political realms (Shabecoff, 2003).

This blending of economic and environmental sustainability has certainly continued, and arguably intensified, well into the 21st century. “Green” documentaries have been among the more popular, including *Who Killed the Electric Car?* (2006), *An Inconvenient Truth* (2006), and *March of the Penguins* (2005).² Many major magazines have come out with “green issues,” some as annual special editions (Brainard, 2008).³ The existence of these special issues, especially considering how environmentally unfriendly the medium itself might be, shows how the environmental sustainability is attractive to consumers (Williams, 2008).

Between the influences of the mainstream media embracing environmentalism, the recent unprecedented natural disasters, and increasing acceptance of global warming, the movement has changed. Growing from the

philosophy of social ecology, environmentalism is becoming closer to a lifestyle than a movement (Shabecoff, 2003, p. 116).

The Internet has become an invaluable tool for the environmental, or “green,” movement, as it has for all major social movements (Kenix, 2008; McNutt & Boland, 1999; Wall, 2007). TreeHugger is just one expression of social movements embracing online media. TreeHugger (2008a) self-describes the site as trying to assist individuals in enabling an ecological lifestyle without sacrificing quality of life. This study adds to third wave environmental literature by examining how environmentalism is active in this newer medium.

TreeHugger was founded by Graham Hill in 2003 (TreeHugger, 2008a). The site is consistently rated among the top 30 blogs on Technorati, the leading blog search engine (Technorati Media, 2008a), and second only to DailyKos.com (www.dailykos.com) for issue advocacy blogs.⁴ According to their “About Us” page, TreeHugger’s mission is “to be a one-stop shop for green news, solutions, and product information” and is “dedicated to driving sustainability mainstream” (TreeHugger, 2008a). The name “TreeHugger” refers to, and co-opts, the derogatory term for environmentalists and symbolizes embracing environmentalism as part of anyone’s everyday life.

While primarily a news and information outlet, they make a point to involve readers with surveys, forums, and other features. More recently, TreeHugger has created a Twitter account, enabling the possibility of more direct and personal communication with readers. TreeHugger experimented with other means of featuring their users before. On the defunct “Comment Central” page, they

emphasized the goal of interactivity, beginning the page's description, "Hey! The Internet was supposed to revolutionize **two way** communication. Enough about you... welcome to Comment Central" [bold text original] (TreeHugger, 2008b). TreeHugger even created a social environmental news website called Hugg.com, though it never developed a strong following and was eventually removed (Yoder, 2008).

Discovery Communications bought TreeHugger for an estimated \$10 million in August 2007. Discovery was preparing to establish a new cable channel, Planet Green, and the purchase of TreeHugger was a part of the company's overall restructuring (Aherns, 2007). While the blog now has corporate ties, it is not affiliated with any non-governmental organization (NGO) or political party. The blog challenges both Democratic and Republican politicians when they support ecologically harmful policies (McDermott, 2008).

III. Review of Literature

This literature review covers four main areas of literature related to the purpose of this study. First, blog research is discussed, providing a basis for studying the medium. Public sphere and web sphere literature are reviewed particularly as they have been studied online. Next, interactivity research is discussed in both technical and textual forms. Finally, in a review of framing theory literature, the metacommunication frame is discussed and developed as a major theoretical guide for this study.

III.a Blogs

A generally accepted definition for a weblog (or more commonly, a “blog”) is a “[web]page that is frequently updated with entries placed in reverse chronological order, with links to the online material you cite” (Blood, 2002, p. 39). While not every blog is “frequently updated,” it is the norm, especially in the case of professional blogs. The capability for users to comment on posts is a typical feature, though not requisite.

One important difference between blogs and traditional news outlets is the personal nature with which posts may be written. The personal, often opinionated, nature of blogs is sometimes a source of criticism, but it is an important element distinguishing them from other types of news websites (Guillory, 2007). Even when traditionally schooled journalists employed by the mainstream media write blogs the personal element is apparent (Robinson, 2006).

Blogs have been well documented in their current role in producing and reporting news. Especially in the case of niche blogs, they can be up to weeks ahead of the mainstream media in reporting stories (Kent, 2008, p.33). Many professional journalists frequently visit blogs, particularly the “A-list” blogs, and they sometimes get ideas for stories (Johnson & Kaye, 2004). There are many examples where blogs received credit for creating or maintaining the salience of important stories, most prominently the comments that led to Sen. Trent Lott’s resignation and the false documents Dan Rather reported regarding former President George W. Bush’s military record (Pein, 2005; Smolkin, 2004; Trammell & Keshelashvili, 2005; Williams et al., 2005). Some disagree that bloggers were principally responsible in those cases, though even detractors do not deny their role in those extraordinary examples (Pein, 2005).

Despite a growing acceptance by the mainstream media, many bloggers are very critical of traditional news outlets (Cooper, 2006; Pein, 2005; Perlmutter, 2008; Smolkin, 2004). This conception has been portrayed as both positive, with the blogosphere even labeled “fifth estate” (Cooper, 2006), and negative, with some referring to bloggers acting as a “mob” (Pein, 2005, p. 31). Negative portrayals of blogs in the media may be cause for the general public’s uncertainty over blogs’ credibility, though greater experience with them has been shown to increase credibility (Mackay & Lowrey, 2007).

The interactive and collaborative possibilities with blogs are often overlooked in favor of sensational David and Goliath media battles. Proponents of the medium often tout this as the true benefit of blogs and the Internet in general (Smith, 2008,

Stromer-Galley, 2000). Smith (2008) writes, “the open-forum quality of blogs defines them as especially democratic, connecting authors with larger audiences engaged in vibrant, ongoing conversation” (p. 40). Readers can “bounce ideas off one another and develop new trains of thought that they might not have considered on their own” (p. 45). Experimenting with blogging in her writing class, Smith recognizes that there are negatives to using the medium. The kind of control reserved by writers in more traditional media is not as possible with blogs. Writing in blogs is communal and thus pushes the boundaries of what writing can be.

Part of the much-hyped opposition with the mainstream media and bloggers might be due to this difference in real, as well as perceived, interaction. While mainstream media outlets are beginning to make an effort to engage readers with interactive tools such as forums, blogs, video, games, and chat rooms (Pryor, 2002), the discussion of the “elite press” in the 2008 presidential election reveals a vibrant feeling of animosity for them among many Americans. Blogs invite users to share in the creation and discussion of the news and might act to dissuade similar accusations of elitism.

III.b Online public sphere

The Web has been long compared to physical environments with terms such as “cyberspace,” “online environment,” and the early term “information superhighway.” Especially since the beginning of Web 2.0 and social networks, some have referenced the Internet as an “online community” (Kerbel & Bloom, 2005; Trammell, 2004). Internet public sphere literature, reviewed below, is one area of scholarship that has begun to explore how this communal space might operate.

Less than a decade ago, two of the major kinds of online communities were personal websites (i.e., Geocities), which the space provider often clustered by theme, and online “clubs” (i.e., clubs.yahoo.com, communities.msn.com). Because of the exclusive nature and limited scope of many of these virtual communities, as well as their corporate ownership, deliberative democratic participation was limited (Dahlberg, 2001).

Fortunately, more deliberative online spaces were developing at the same time. Minnesota E-Democracy, the Iowa E-Democracy project, and Malaysia.Net are examples of corporation and non-governmental projects that facilitated such discussion. Mainstream media outlets online provided opportunities for people to discuss stories in live chat and discussion boards. These more open virtual spaces were closer to the idea of the “public sphere” as developed by Jurgen Habermas (Dahlberg, 2001).

III.b.1 Public sphere

Habermas’ (1989) theory of the public sphere has been passionately discussed in relation to the Internet (e.g., Dahlberg, 2000; Dean, 2003; Foot, 2002; Lee, 2006; Papacharissi, 2002; Stromer-Galley, 2002). Recognizing the futility of achieving the ideal, this study observed whether elements of the public sphere ideal are acted out on a blog like TreeHugger.

Habermas’ public sphere was developed by looking at the state of public deliberation throughout the last several centuries in Europe. During feudalism the ‘public realm’ existed under a state of representation without consent or input from the people. It was with the growth of global mercantilism, and the resulting spread of

information through the printed word, that publics had the capability for critical reasoning (Habermas, 1989; Goode, 2005).

Quite simply, the merchant newsletters developed into the early press in the eighteenth century, containing not only economic and political news, but opinion articles as well. The literate bourgeoisie began meeting in the coffeehouses and France to have open discussion about issues facing society, rejecting class and rank as qualifiers for participation. The rational-critical debate that resulted revolutionized all aspects of society well into the 19th century (Habermas, 1989; Goode, 2005).

Habermas credits the spread of organized capitalism and, later, mass media with the fall of the rational-critical public sphere. Competing interest groups refocused efforts to “the *division* rather than the dissolution of power” (Goode, 2005, p. 15), and “a culture *debating* public had, according to Habermas, been displaced by a culture *consuming* public” (p. 18) [italics original]. He referred to this as the “refeudalisation of the public sphere” (Habermas, 1989, p. 195).

At the core of the public sphere is rational, informed deliberation toward consensus and enlightenment as well as active participation. The ideal nature of the hypothesis has been a source of criticism (e.g., McKee, 2005), though Garnham (1992) defends this by pointing out that the public sphere is merely a continuing pursuit of the ideal, without assuming that it has been achieved or that it necessarily will be achieved.

Just as the eighteenth century public sphere grew from new media (i.e., the press), the growth of Internet usage has inspired great discussion of its potential as a

public sphere (Buchstein, 1997; Cammaerts & Van Audenhove, 2005; Dahlberg, 2001, 2005, 2007; Dahlgren, 2005; Dean, 2001; Dean, 2003; Tedesco, 2004). Some scholars have argued that achieving the public sphere online is not only impossible, but that it could have negative effects on deliberative democracy (Bimber, 1998, 2000; Dean, 2003). Rather than choose an absolute side in the debate, some scholars have recognized the futility in hoping for a pure manifestation of the public sphere online. Lee (2006) examined the blogosphere with public sphere characteristics combined from Dean (2003) and Dahlberg (2000). Lee worked under the assumption that the public sphere is an impossible ideal. In pursuit of that ideal, the blogosphere held promise in the low barriers for entry and the hyperlinked system, connecting individuals and their ideas. The unclear economic and political influences were the most influential barriers to further attaining Habermas' ideal.

While achieving the ideal public sphere online is arguably impossible, Dahlberg (2001) found Minnesota E-Democracy to be unusually close to success. The group discussion focused on politics and policy in Minnesota utilizing open forums that organizers chose to "manage" rather than "moderate" (p. 624). By using clear rules and guidelines for participation they were able to keep discussion both focused and substantial. The forums where the discourse took place were also emailed out to members every day to ensure that everyone was exposed to the entire group.

Stromer-Galley (2002) found through survey research that 15% of respondents took part in discussion of politics or public affairs online, but not in face-to-face situations. Those who participated in online political discussion also tended to be younger men who were interested in politics, though less

knowledgeable and efficacious. This points to the possibility she recognizes that some participants of online discussion would not feel comfortable doing so in interpersonal situations. "It may be that people who feel less efficacious have much to complain about and the Internet provides a forum through which they can voice their frustrations with the current political scene" (p.33).

Ironically it might be the lack of emotional connection that gives online communication its greatest potential. Stemming from Short, Williams, and Christie's (1976) study connecting a medium's nonverbal potential to the perception and attitude toward the medium, Stromer-Galley (2002) suggests that a reduced "presence" online might give users a greater sense of control.

This study observes online discussion of an issue other than general politics and public affairs. Through analysis of blog post comments by TreeHugger.com visitors, evaluation of public sphere features will be made similarly to Dahlberg's (2001) analysis of the online public sphere.

III.c Interactivity

The incredible potential for online interactivity was a great source of enthusiasm during initial years of Internet diffusion (Schultz, 2000). The myriad media available online has led some media theorists to label the Internet a "meta-medium" (Levinson, 1999). Enthusiasm surrounding the interactivity on the Internet is not just techno-optimists wallowing in an emerging medium. Political campaigns are increasingly using various interactive means, both technical and text-based (Trammell, Williams, Postelnicu, & Landreville, 2006). This is for good reason, as effective execution of interactive features has been shown to raise individual's

political efficacy in election campaigns (Tedesco, 2006) and to encourage more active discourse (Dahlberg, 2000, as cited by Moldoff & Williams, 2007; Moldoff & Williams, 2007; Stromer-Galley, 2002).

After analyzing the nominees of European and American newspaper website awards, Beyers (2006) found that the winners all had greater levels of interactivity. His analysis showed that the most important manifestations of interactivity were immediacy, multimedia, and the use of discussion boards. The ability for users to find and use information nonlinearly is a notable advantage over other media as well (Coleman et al, 2008; Williams & Trammell, 2005).

One difficulty in researching interactivity is that its definition is not always clear and arguably lacks theoretical definition (Bucy, 2004). Some have argued that interactivity is a solely human-to-human concept (Rafaeli, 1988), however some Internet scholars have argued for the conception of interactivity as a medium characteristic. One such scholar argues, “to ignore media-interaction as a form of interaction... is to risk ignoring the important structural components that facilitate or hinder human communication in many contexts on-line” (Stromer-Galley, 2000, p. 119).

As explained clearly by Stromer-Galley’s (2004, p. 391), “the concept of ‘interactivity’ is confusing because it refers equally to different phenomena. One can identify ‘interaction’ between people, between people through mediated channels, between people and computers, and between computers through software, hardware, and networks.” It is particularly confusing at times when discussing blogs

and other computer-mediated communication (CMC) because multiple types of interactivity occur at the same time.

Interactivity-as-product “occurs when a set of technological features allows users to interact with the interface or system itself” (Stromer-Galley, 2004, p. 391). This would include the use of hyperlinks, playing games on a website, watching a video, or using other responsive media online. Interactivity-as-process is closer to the interpersonal definition, referring to communication between humans using some form of networked system. Message boards, instant messaging, and chat rooms would all be interactivity-as-process. The way interactivity-as-process is used on a website reflects power dynamic choices made by the designers (Stromer-Galley, 2004). For methodological purposes, in this thesis interactive elements will be identified as either textual (interactivity-as-process) or technical (interactivity-as-product).

III.c.1 Textual interactivity

Through the [blog] comments, a story can become a “dialogue of comment, explanations, corrections, elaborations, retorts, and occasionally, insults” (Kent, 2008, p. 34). Encouraging participation in how issues are framed can occasionally result in negative comments toward the organization or website, but it is also one of the greatest strengths of blogs as news sources. Points raised by dissenters can reveal elements of the issue not brought up in an actual post (Kent, 2008). Many visitors to niche news blogs are experts in the field, and thus are able to substantially add to the conversation as “coherent groups of individuals/professionals who share a common interest” (Kent, 2008, p. 36).

Providing human interaction via blogs creates hesitation in some organizations due to the possible negative consequences. In an examination of candidate websites in 1996 and 1998, Stromer-Galley (2000) found that two of the three main reasons for resisting too much interaction on the sites were “loss of control” and “loss of ambiguity” (p. 122).⁵ In a campaign situation, neither of these are attractive outcomes because they make the primary goal of winning the election, more difficult.

In a website with the primary goal of sharing information, those drawbacks could become benefits. Allowing users control over how stories are discussed could bring out aspects of the issue not in the original article in a conversational, unrestrained style (Vergeer & Hermans, 2008). Blog users, particularly in a niche blog, are usually highly interested in the topic and might even be experts on the subject discussed (Kent, 2008). Trammell’s (2004) study of A-list blogs and their comments posted by blog visitors found that users occasionally got off topic, but overall they provided a positive contribution to the site. Commenters answered direct questions from the posts and corrected the blog writer with information from other sources.

In order to discover how similar the most frequently discussed topics in the posts and in the comments are and how they are discussed in each, the following research questions are proposed:

Issue Frequencies

RQ1a: What are the most prevalent blog post and blog comment issue categories appearing on TreeHugger.com?

RQ1b: Is there a difference in issue frequencies present in blog posts and blog comments appearing on TreeHugger.com?

Valence

RQ2a: What is the valence of blog posts and blog comments appearing on TreeHugger.com?

RQ2b: Is there a difference between the valence of blog posts and blog comments appearing on TreeHugger.com?

RQ2c: Is there a difference in the valence for issue categories presented in blog posts on TreeHugger.com?

RQ2d: Is there a difference in the valence for issue categories presented in blog comments on TreeHugger.com?

RQ2e: Is there a difference between blogs posts and blog comments with regard to the valence of issue categories appearing on TreeHugger.com?

The issue of human-to-human computer mediated communication has been studied a great deal in dialogic theory scholarship. "Dialogic theory suggests that for organizations to create effective organization-public communication channels, they must be willing to interact with publics in honest and ethical ways." (Kent, Taylor, & White, 2003, p. 67). Kent and Taylor (1998, 2003) identified five general principles to improve dialogic relationships online. These include maintaining a "dialogic loop," (the opportunity for user feedback and response from the site administrators), usefulness of information, ease of interface, the generation of return visits, and exercising the "rule of conservation" (keeping visitors on the site in order to

experience the full resources). The use of textually interactive features acts to create effective dialogic relationships through these principles.

Forums are another popular form of dialogic interactivity explored in communication research. Constantinescu and Tedesco (2007) found that users of Romanian newspaper forums framed stories about a high-profile kidnapping differently than journalists. Perhaps the greatest value in online forums results when journalists take into consideration the different perspectives posted by users. In a 2006 study, interviews with *New York Times* reporters found that 12 out of 19 reporters did not visit their online forums. This was despite all of them having received emails which referenced forum posts on their articles. “Vivid discussions [are] taking place that are mostly interactive,” yet those perspectives were not considered in the news reporting (Schultz, 2000, p. 215).

Other textual, but less web-based, interactive elements are often used online as well. The use of rhetorical devices such as direct address, calling to action, and requesting feedback from users are widely used (Trammell et al, 2006). These devices can help to engage users of a site, however it is important that if feedback is requested, appropriate technical features are used in concert to facilitate the action (Endres & Warnick, 2004).

This thesis also views the process of metacommunication as potential textual interactivity. For example, in cases where a writer of a post refers to user-generated content, it is considered metacommunication as well as textual interactivity. This is a clear example of establishing the “dialogic loop” identified as important to strengthening dialogic relationships online (Kent & Taylor, 1998). Exploring the

possibility that these communication features have a strong relationship could add to metacommunication research in online environments.

III.c.2 Technical interactivity

Technical, or interactivity-as-product, features online typically receive the most attention when considering interactivity. It is becoming increasingly simple to embed any number of technical elements such as polls, video, photo slideshows, and hyperlinks into websites and blogs. As a result, technical features are more widely used than ever. There has been a good deal of research on implementation of interactive features on newspaper websites. While hyperlinks may not be the most complex form of technical interactivity, they are certainly the most common. The ability hyperlinks give users to move around online as they see fit is the very reason that campaigns (Stromer-Galley, 2000; Williams et al, 2005) and online newspapers (Dimitrova et al, 2003) have hesitated to link to websites outside of their sphere of influence. In this way hyperlinks can be used to serve a gatekeeping function, limiting users' navigation. The true potential of linking lies in allowing users to make the experience of receiving the information however they wish it to be (Dimitrova et al, 2003; Stromer-Galley, 2004).

Use of other technical features online has been criticized as having mixed value. Polls are a popular feature on websites and blogs that do well at engaging users. However, Kent, Harrison, and Taylor (2006) found that Internet polls are misused on news websites. Poll results are often presented as accurately representative despite their great deficiency in statistical rigor. Additionally, a 2000 study by Sundar found that the use of downloadable multimedia (e.g., video, audio)

actually hindered learning information presented on the site by interrupting learning while they downloaded.

These examples make it clear that using interactive features online is not foolproof, nor it is always a good thing. It is important to avoid assumptions that the use of technology automatically results in socializing or educational effects (Stromer-Galley, 2002). To most effectively use technological features available online, site designers should understand how they best operate and their potential. In the cases of campaigns and corporate newspapers, there seems to be a desire to keep users on the site for financial and political effects. It should be noted, however, that many websites, including blogs, have become financially successful by allowing free navigation with hyperlinks.

The following research questions are proposed to learn how interactive features, both textual and technical, are used by TreeHugger and its users, as well as how those used by the blog writers influence interactive elements in comments:

Interactivity

RQ3a: What types of interactivity are present in blog posts and blog comments appearing on TreeHugger.com?

RQ3b: What are the most prevalent types of interactivity on TreeHugger.com?

RQ3c: Is there a difference between the types of interactivity used in blog posts and blog comments on TreeHugger.com?

Since TreeHugger is a financially successful blog, as evidenced by the Discovery Communications acquisition, analyzing the interactive elements used on the site could provide insight into proper uses. By comparing the textual and

technical interactivity features in TreeHugger.com posts and comments, this study will advance the literature on website interactivity particularly in a non-campaign context. Analyzing the comment section of the posts will add to blog literature as well. Some studies have looked at the role comments play in blogging (Smith, 2008; Trammell, 2004). This study hopes to contribute methodologically and theoretically to the study of blog comments. Blog comment sections are understudied despite being an important element of the medium. Framing analyses of other user-generated content such as forums will help guide this study (e.g., Constantinescu & Tedesco, 2007).

III.d Framing

Entman (1993, p. 51) writes, “the concept of framing consistently offers a way to describe the power of a communicating text.” Framing theory suggests that a text is made powerful as much by how the text is presented as what is said (Pan & Kosicki, 1993). Ability of to make a given aspect more salient lies in their basis in shared beliefs among a society’s members as communicated through “organized symbolic devices” (Pan & Kosicki, 1993, p. 58). Within that society, frames work as shorthand to more easily communicate or understand an issue. For example, writing that a new tax on the very wealthy will result in lost jobs encourages people to understand it primarily as having economic consequences. If the tax were depicted as only “negatively affecting those who have benefited in a recession economy,” then it would be framed, and thus understood more, as a moral issue. While facts may be the same, using these socially salient contexts suggests to readers how to best understand the issue.

III.d.1 Defining Framing

Todd Gitlin's (1980, 2003) examination of news coverage of anti-war protestors during the Vietnam War is among the early discussion of framing. The media framed them as "illegitimate" in their attempts to end the war – a job better left to the "responsible authorities. Gitlin (2003) wrote that "frames are in effect negotiated among sources, editors, and reporters; how they will emerge in practice is not preordained" (p. 274). Since then, research has shown framing to be a powerful tool for strategic "spinning" of issues (e.g., Menashe & Siegal, 1998; Simons, 1994).

There have been many definitions of framing theory presented, which Weaver (1997) suggests is the cause of the debate on whether framing is the same as second-level agenda setting or its own distinct theory. Some scholars have suggested that second-level agenda setting is the transfer of frame salience (Ghanem, 1997; McCombs, Llamas, Lopez-Escobar, & Rey, 1997), while first-level agenda setting is the transfer of issue salience (McCombs & Shaw, 1972). Scheufele (2000), in a detailed explication of agenda setting, priming, and framing, concluded that agenda setting and priming differ from framing in their theoretical foundations. The first two rely on attitude accessibility, while framing influences interpretation of issues by calling up "interpretive schemas" which assist in understanding information.

This study will use the definition of framing as "[selecting] some aspects of a perceived reality and [making] them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described" (Entman,

1993, p. 52). This describes how the writer or speaker of the text assists the reader or listener in understanding an additional element of the topic discussed.

Pan and Kosicki (1993, p. 59-62) categorize framing devices into four groups: syntactical structure, script structure, thematic structure, and rhetorical structure. Syntactical structure refers to how words and phrases are arranged in the text. In news reporting this is most likely characterized by the inverted pyramid structure, but can also refer to practices that indicate impartiality, including quoting professionals (Pan & Kosicki, 1993) and, in online media, hyperlinking.

Script structures are practices in news reporting which define an independent story. The classic “five Ws and one H” are an important elements of this (Pan & Kosicki, 1993, p. 60). The empirical nature of news reporting is the “thematic structure.” The headline will often present a hypothesis which evidence and causal statements within the text work to prove (Pan & Kosicki, 1993, p. 61). Pan and Kosicki discussed traditional news reporting in their analysis, but these features can be present in professional blogs as well.

The last framing device identified, rhetorical structure, involves stylistic choices made by the journalist, including the use of the five framing devices identified by Gamson and Modigliani (1989) – metaphors, exemplars, catchphrases, depictions, and visual images. The claim of facticity is an additional prominent rhetorical device of news writing (Pan & Kosicki, 1993, p. 61-2).

De Vreese & Boomgaarden (2003) explored the *nature* of frames rather than simply which frames were present in stories regarding a EU summit in 2000. They not only found that the frames in their international sample more often than not

carried a valence, but that the valence had influenced support for EU enlargement. Their idea that frames are inherently valenced has been supported by much framing research (e.g., Kaid, et al, 2005; Moldoff & Williams, 2007; Williams, 2007; Williams & Kaid, 2006), though valence sometimes labeled as “tone” (Bichard, 2006).

Framing studies dealing with Internet content thus far have focused on political campaign communication (Bichard, 2006; Thorson & Wise, 2007), science (Guillory, 2007), war coverage (Dimitrova, Kaid, Williams, & Trammell, 2005; Williams, 2004), and kidnapping of journalists (Constantinescu & Tedesco, 2007). Looking at presidential campaign blogs in the 2004 election, Bichard (2006) found various connections between the dimensions of issues and the framing within blog posts. Being very different in nature, those same correlations are not expected to appear in TreeHugger, but similar patterns might emerge.

This study will aim to advance literature on framing effects online as previous research has suggested (Bichard, 2006). By observing whether the readers of TreeHugger react to how issues are framed, results could show if there is a similarity in how the blog and its readers frame issues. This study also will advance blog framing research by examining a blog outside of a campaign or otherwise political context.

The next section will discuss metacommunication, the primary area of framing theory that will be utilized in this study.

III.d.2 Metacommunication

The study of the metacommunication frame typically refers to the way in which various types of news media have come to frame stories in terms of the

media's coverage, role, and performance. Metacommunication also deals with the great amount of coverage of the media themselves (Williams, 2004).

Metacommunication is defined broadly as communication about a communication, being viewed both as a frame and a process (Watzlawick, Beavin, & Jackson, 1967). Mazzoleni and Shulz (1999) note how "the media" are no longer, if they ever were, simply mediators of news. In fact, Mazzoleni and Shulz contend that media often "produce political content and interfere with political processes" (1999, p. 250).

Media theorists have more specifically defined metacommunication in the media as "the news media's self-referential reflections on the nature of the interplay between political public relations and political journalism" (Esser, Reinemann, and Fan, 2001, p. 17). Most metacommunication literature has dealt with political news coverage (e.g., Bennett & Entman, 2001; Esser & D'Angelo, 2003; Lichter & Noyes, 1995; Swanson & Mancini, 1996) but the concept has been applied to coverage in other contexts as well, including war (Dimitrova et al, 2005) and national crises (Constantinescu & Tedesco, 2007). These studies have primarily involved more traditional media (e.g., newspapers, television). Metacommunication has not been examined to a great extent on natively online media such as blogs.

Metacommunication research has typically divided the frame into two categories: self-reflexive and strategy/process. Self-reflexive metacommunication is framing in the context of how the media is covering an issue and the role they are playing, particularly in political campaigns. Strategy/process refers to the tactics used by communication professionals to influence media coverage. This is typified in the negative stereotype of the "spin doctor" (Williams, 2004).

Constantinescu and Tedesco (2007) classified metacommunication as one of three “macro-frames.” They defined these differently from generic frames in that “they function as the foundation upon which the generic frames are constructed” (p. 450). Their study analyzed online media in news stories and forums on Romanian newspaper websites. The stories and related forum posts dealt with a 2005 kidnapping event. They found that metacommunication was the most prominent macro-frame in the news stories but was the least prominent macro-frame in the reader created comment.

Kerbel and Bloom (2005) examined Governor Howard Dean’s presidential campaign blog, *Blog for America*, for several frames common to print and news media coverage. They found that, while metacommunication frames were present, they were used in substantially different ways. Discussion of strategy and the online community was affirmatively rather than negatively valenced, as is typical in mainstream media coverage (p. 5). This study will add to metacommunication literature by applying it to blogs and blog comments. Applying the frame to comments will build on the audience framing online addressed by Constantinescu and Tedesco (2007). Blogs offer new opportunities for metacommunication research because of some of their common elements shared with forums.

One common method of metacommunication in blogs is the use of hyperlinks in a story. Hyperlinking to another online source in a blog or a mainstream media website is a common way of acknowledging the source of information and giving readers a way to learn more about a topic. Linking to previous articles within a website is a popular practice in blogs as well as in mainstream media websites. The

level of external to internal linking is important to note particularly in blogs as it indicates participation within the blogosphere.

This study will add to metacommunication literature exploring the overall valence put on use of the metacommunication frame. Metacommunication is typically valenced negatively (D'Angelo & Esser, 2003; Esser, 1999; Esser & D'Angelo, 2003, 2006; Esser, Reinemann, & Fan 2000, 2001; Esser & Spanier, 2003, Simons, 1994), referring to either the media focusing on themselves at the detriment of the issues (self-reflexive) or political actors "spinning" a story in their favor (strategy/process). Notably, self-reflexive metacommunication is also known as "media narcissism" (Moldoff & Williams, 2007).

Williams (2006) found that, in new coverage of Operation Iraqi Freedom, the strategy/process metacommunication frame was most often education as opposed to adversarial. This suggests the possibility that metacommunication can be a positive way to frame a story and not solely "media narcissism." Others have argued for the positive, informational potential of this metacommunication frame as well (D'Angelo, 1999; McNair, 2000). This study will look for this positive element of metacommunication in external as well as internal metacommunication regarding the website or post author. Extremely interactive media such as blogs might encourage use of the metacommunication frame, particularly by users of the site, for the purposes of community building. Users might comment on how the post's author frames or selects information, thus engaging in a valuable discussion on the topic. Metacommunication also can be viewed as an interactive textual element in this respect.

In order to understand how the metacommunication frame is used in the filter blog TreeHugger in posts and comments, the following research questions are posed:

RQ4a: What is the frequency of metacommunication present in blog posts and blog comments appearing on TreeHugger.com?

RQ4b: Is the focus of metacommunication in the blog posts and blog comments internal/self-referential or external/strategy process?

RQ4c: What is the difference between the focus of metacommunication in blog comments and blog posts appearing on TreeHugger.com?

IV. Research Method

IV.a Sample

The time frame for this study spans from January 1, 2008 to June 30, 2008. Non-campaign related content analyses of blogs have covered anywhere from a week (Reese et al, 2007), under four months (Xenos, 2008), six months (Moldoff & Williams, 2007) to ten months (Trammell, 2004). In a study designed to identify the most efficient sampling method for online news, Hester and Dougall (2007) found that “simple random and consecutive day samples are much less efficient” than constructed week sampling (p. 820), reinforcing previous scholarship (Riffe, Aust, & Lacy, 1993). Further, the results showed that two weeks are required for a reliable sample in a six-month population. Riff, Aust, and Lacy covered more traditional news articles from the *Yahoo!* News website, but it is reasonable to use their method for blogs since a constructed two-week sample is still larger than previous studies have utilized (Hester & Dougall, 2007).

The sample was achieved by first using a random number generator to create two constructed weeks from the time frame. The researcher saved all posts, along with their comments, to a central database. This allowed time for users reading a post after the day it is published to take part in the discussion. Because of the frequency in which posts are published on TreeHugger.com, it is unlikely that many users will visit and comment on posts over a week after the post appears online. The researcher also designated each post with an identification number.

This process resulted in a sample of 336 blog posts. Based on previous research, if there were more than ten comments within a week following the post, systematic random sampling was used to code ten percent of the comments. This strategy was adopted to help make substantial numbers of comments manageable for content analysis methods. In previous content analyses of comments, all comments were included in samples when ten or less comments appeared for a post (Trammell, 2004). Adoption of these previous sampling methods resulted in a sample of 1,342 comments. Thus, the sample in this thesis includes 336 blog posts and 1,342 comments.

IV.b Coder Training and Intercoder Reliability

In order to assess intercoder reliability, a subsample of 15 posts and 102 comments was used. A coder training session was performed to ensure the coder used for reliability analysis was familiar with the codebook and codesheet. Intercoder reliability was assessed using Holsti's formula and reached an overall reliability coefficient of .94 for all categories, with a range of .87 to 1.00 across individual categories.

IV.c Coding Scheme

The unit of analysis for this study includes the blog posts and their comments up to a week after it being available on the website. Previous Internet content analytic framing studies have used the post as the unit of analysis, but few have included comments or user-generated reactions (for exceptions see Constantinescu & Tedesco, 2007; Trammell, 2004). The ways the users of the site participate in

discussion of posts are integral to an exploration of a blog's community and this should be an area of addition to blog literature.

Each post was first coded for basic identifying information including the date, the name of the author, the TreeHugger-defined post issue category,⁶ and post topic. Topics were chosen from previous research on environmental journalism and public relations (Insch, 2008; Sachsman, Simon, & Valenti, 2006). Additional topics were included as appropriate and the content analysis codebook provided for emergent topics beyond those appearing on the codebook *a priori* to be added to the analysis. The overall tone of the post also was coded. Tone was coded separately from frame valence. This study used Richard's (2006) definitions of tone. Richard defined positive as "optimistic, stressing fairness, logical and sensitive demeanor," negative as "hostile, oppositional, or aggressive language," and neutral as "void of judgment, only statements of facts or reports of events" (2006, p. 334). Thus, each sampling unit was coded for overall tone and each frame was coded for valence.

Some of the issues that were predicted as being more frequent and complex were coded as having valence themselves. For example, rather than only code if there was discussion of politicians, each particular mention of politicians was coded as being positive discussion of politicians, negative discussion of politicians, or neutral discussion of politicians. This enabled a level of depth that would not be possible if only the entire post was coded for valence.

Comments were coded similarly to blog posts. They were identified as belonging to a particular post by the designated post number and then coded by

date, topic, and whether the comment writer is identified as TreeHugger staff. Each comment was coded individually per the guidelines defined above.

IV.c.1 Coding Metacommunication

Metacommunication frames in blog posts and comments were first identified as either internally focused (self-reflexive) or externally focused. Externally focused metacommunication frames will include either strategy/process frames or citation of other media. As a filter blog, it is expected that TreeHugger.com will have a significant amount of this external metacommunication framing. Guillory, (2007) suggested that hyperlinking should be considered as a “reference” frame. This thesis will code citing other media through hyperlinks as a form of external metacommunication framing (Constantinescu & Tedesco, 2007).

It is important to code for internal and external metacommunication frame focus to compare between the post and the comments’ framing. If the post clearly utilizes external metacommunication frames but the comments focus internally, it could indicate that users view TreeHugger as the source of the information rather than simply a filter for other sites.

This thesis will consider user-submitted comments as contributing to the content of the blog. Moldoff and Williams (2007) posit “because of the innate interactive and at times informal nature of blogs, people feel compelled to directly address other users when providing feedback” (p. 62). This kind of user-to-user comment will be considered internal metacommunication in response to content on TreeHugger. All comments in the sample will be coded for frame valence according to valence definitions established by DeVreese and Boomgaarden (2003). For this,

the study used the terms affirmative, challenging, and general discussion rather than positive, negative, and neutral. These designations were based on the educational, adversarial, and neutral strategy/process categories in Williams (2004, p. 38).

Metacommunication frames in the blog posts were coded as positive, negative, or neutral.

Comments will not be coded as having the metacommunication frame simply for expressing opinion, as that is essentially inherent to the form. User comments may simply add non-valenced information, but the general purpose is for people to add their opinions to the conversation. Coding essentially every comment as being framed as metacommunication would add little to the study.

IV.c.2 Coding Interactivity

Interactivity will be coded initially in posts and comments as either textual or technical. Technical interactive features will be defined as human-to-human interaction (e.g., direct address, call to action) as well as technical features (e.g., email links, forward to a friend links) that are designed to facilitate human-to-human interaction. Metacommunication will also be considered a form of textual interactivity as described above.

Technical interactivity will be defined as human-to-system, or human-to-computer interaction (e.g., multimedia, games, polls, hyperlinks). Items that will be coded as each are based on prior coding criteria from Beyers (2006), McMillan, Hoy, Kim, and McMahan (2008), and Bystrom, Banwart, Kaid, and Robertson (2004).

V. Results

This study content-analyzed posts and user-submitted comments on the popular environmental blog TreeHugger in order to understand how the website and its readers interact and relate to one another in terms of issue coverage, use of interactivity, and in their use of the metacommunication frame. This section will summarize the findings as they relate to the research questions posed above.

RQ1a: What are the most prevalent blog post and blog comment issue categories appearing on TreeHugger.com?

One of the first elements coded was the post category as designated by TreeHugger. These categories are used by the website for organization just as print newspapers typically have different sections for sports, entertainment, world news, and local news. The categories also provide the site with the ability to create individual RSS feeds⁷ for users to get the posts that they most want to read. These include eight topical categories (i.e. *Cars & Transportation*, *Science & Technology*, *Design & Architecture*, *Culture & Celebrity*, *Travel & Nature*, *Food & Health*, *Business & Politics*, *Fashion & Beauty*) as well as three TreeHugger-specific categories (i.e., *Interact*, *Take Action*, *TreeHugger Exclusives*).

As seen in Table 1, the TreeHugger categories with the highest percentage of blog posts were *Business & Politics* (21.7%), *Design & Architecture* (17.9%), *Science & Technology* (14.9%), and *Cars & Transportation* (13.7%). After the top four there was a greater decrease in frequency to the fifth, *Culture & Celebrity* (6.5%).

Both posts and comments were also analyzed for the issues present in the discussion in order to better understand the discussions taking place. While the TreeHugger categories indicate the general topic of the coverage, there were certainly cases where elements of each crossed into one another. Coding of issues used a list developed from previous environmental media research (Insch, 2008; Sachsman, et al., 2006) and other issues observed in previous experience with TreeHugger and other environmental blogs. An “other” item was added to include emergent issues, some of which were more frequent than those in the initial list.

The ten issues discussed most in TreeHugger posts⁸ were “business policies & activities (positive)” (21.3%), “energy conservation” (18.9%), “sustainable energy sources” (17.2%), “recycling/ reuse/ waste reduction” (15.1%), “gadgets & purchasable products” (13.6%), “architecture & building technology” (13.4%), “environmental resource conservation” (12.5%), “science & technology” (12.4%),⁹ “TreeHugger content” (12.1%), and “pollution” (11.3%) (Table 2).

RQ1b: Is there a difference in issue frequencies present in blog posts and blog comments appearing on TreeHugger.com?

Not surprisingly, the TreeHugger categories with the most comments from users were the same as those having the most blog posts, though in different order of frequency. These were *Business & Politics* (21.0%), *Cars & Transportation* (20.5%), *Science & Technology* (18.3%), and *Design & Architecture* (16.0%). There was a similar drop-off to the fifth most commented on category, though for the comments this category was *Interact* (7.2%).

There were two significant differences in proportion of items in the categories. Comments appeared in *Cars & Transportation* in greater frequency than posts did [$\chi^2 (1) = 8.035, p \leq .01$]. Blog posts appeared in two categories with greater frequency. These were *Take Action* [$\chi^2 (1) = 6.433, p \leq .05$] and *TreeHugger Exclusives* [$\chi^2 (1) = 35.09, p \leq .001$].

As with the TreeHugger categories, many of the most discussed issues in user comments were similar to those in posts. The issues most popular in comments were “sustainable energy sources” (12.8%), “gadgets & purchasable products” (11.0%), “science & technology” (10.8%), “TreeHugger content” (8.4%), “energy conservation” (8.3%), “pollution” (7.9%), and “architecture & building technology” (7.8%). The next three most popular issues were different for comments. Users discussed “business policies & activities (negative)” (7.5%), “automobiles (neutral)” (7.3%), and “exclusively economic issues” (6.2%).

As seen in the ten most discussed issues in each group (Table 2), the most popular topics in user comments were more evenly distributed, with no issue being discussed in more than 13 percent of the user comments. In contrast, all but four of the top issues in posts were present in more than 13 percent of posts.

As seen in Table 2, all of the significant differences in issue frequencies between posts and comments showed posts featuring issues more often. These issues were: “sustainable energy sources” [$\chi^2 (1) = 4.489, p \leq .05$], “TreeHugger content” [$\chi^2 (1) = 4.612, p \leq .05$], “energy conservation” [$\chi^2 (1) = 32.781, p \leq .001$], “pollution” [$\chi^2 (1) = 3.985, p \leq .05$], “architecture & building technology” [$\chi^2 (1) = 10.237, p \leq .01$], recycling/ reuse/ waste reduction” [$\chi^2 (1) = 30.993, p \leq .001$], “food”

[$\chi^2 (1) = 12.768, p \leq .001$], “business policies & activities (positive)” [$\chi^2 (1) = 94.069, p \leq .001$], “environmental resource conservation” [$\chi^2 (1) = 27.139, p \leq .001$], “other government , policy, & political issues” [$\chi^2 (1) = 5.895, p \leq .05$], “nature/ wilderness” [$\chi^2 (1) = 9.153, p \leq .05$], “art” [$\chi^2 (1) = 6.527, p \leq .05$], “citizens (positive)” [$\chi^2 (1) = 35.961, p \leq .001$], “global warming/ climate change” [$\chi^2 (1) = 48.726, p \leq .001$], “environmental policy & legislation (neutral)” [$\chi^2 (1) = 10.782, p \leq .01$], “wildlife conservation” [$\chi^2 (1) = 10.211, p \leq .01$], “coal pollution and effects” [$\chi^2 (1) = 5.283, p \leq .05$], “politicians (positive)” [$\chi^2 (1) = 6.597, p \leq .05$], “celebrities (positive)” [$\chi^2 (1) = 25.05, p \leq .001$], “citizens (neutral)” [$\chi^2 (1) = 4.644, p \leq .05$], “environmental education” [$\chi^2 (1) = 26.733, p \leq .001$], “entertainment media” [$\chi^2 (1) = 8.011, p \leq .01$], “activism” [$\chi^2 (1) = 9.003, p \leq .01$], “scientists & environmental professionals (positive)” [$\chi^2 (1) = 35.778, p \leq .001$], “environmental policy & legislation (positive)” [$\chi^2 (1) = 65.293, p \leq .001$], “special event” [$\chi^2 (1) = 16.144, p \leq .001$], and “scientists & environmental professionals (neutral)” [$\chi^2 (1) = 9.359, p \leq .01$].

RQ2a: What is the valence of blog posts and blog comments appearing on TreeHugger.com?

Overall, both blog posts and user-submitted comments were positively valenced. Posts were significantly more positive, with 58.5% of posts being positive, 24.9% of posts being neutral, and only 16.6% negative, as seen in Table 3.1 [$\chi^2 (2) = 53.902, p \leq .001$].

Blog comments still leaned slightly positive, but had no statistically significant dominant valence (Table 3.1). 522 comments (38.8%) were coded as positive, 473 (35.2) comments were coded as negative, and 349 (26.0%) were coded as neutral.

RQ2b: Is there a difference between the valence of blog posts and blog comments appearing on TreeHugger.com?

In comparison to post valence, comments were statistically more negative with 35.2 percent of comments being negative to 16.6 percent of posts. Posts also were statistically more positive than comments, with 197 of 337 (58.5%) for posts to 522 of 1,344 (38.8%) for comments, [$X^2 (2) = 53.902, p \leq .001$] as seen in Table 3.1. The percentages of neutral items are very similar.

Another significant relationship was found when comment valence was broken down by the valence of their respective posts, as seen in Table 3.2. Positive posts were significantly more likely to have positively valenced comments (49.4%). Likewise, negative posts more likely to have negatively valenced comments (48.9%) [$X^2 (4) = 79.411, p \leq .001$].

RQ2c: Is there a difference in the valence for issue categories presented in blog posts on TreeHugger.com?

The clearest relationships between post valence and category lie in some of the TreeHugger categories with the least entries. Namely, *Culture & Celebrity* (90.9%), *Fashion & Beauty* (100.0%), *Take Action* (81.2%), and *TreeHugger Exclusives* (73.3%) are all more than 70 percent positively valenced, though each has 22 or less items in their respective groups. *Design & Architecture* has more than 76.7 percent positively valenced posts, though with 60 posts it is the most frequent of the most positive categories. All other categories except one were also coded as mostly positive. Only three of those, *Business & Politics* (47.9%), *Science & Technology*

(44.9%), and *Travel & Nature* (44.4%) are below 50 percent positive as seen in Table 4.

The only TreeHugger category in which the posts are not mostly positive is *Interact* (23.8% positive). The dominant valence in this case is neutral (71.4%). This can be easily explained by many of the relatively small number of posts in the category (n=21) and the fact that many, if not most, of the *Interact* posts were quizzes or surveys that were neutral and instead invited opinionated positions in the comments.

For issues covered in posts (Table 5), only one issue was significantly more frequent in negative posts. This issue is “business policies & activities (negative)” (52.9% negative posts). Interestingly, discussion of “global warming/ climate change” was found to be most often in neutral posts (44.1%). Several issues were found to be significantly more frequent in positive posts, including “architecture & building technology” (84.4%), “gadgets & purchasable products” (80.4%), “recycling/ reuse/ waste reduction” (86.3%), “business policies & activities (positive)” (76.4%), “citizens (positive)” (81.8%), and “energy conservation (71.9%).

RQ2d: Is there a difference in the valence for issue categories presented in blog comments on TreeHugger.com?

Comments in most all TreeHugger categories tended to lean positive. The major exception to this, as seen in Table 4, was that comments in the *Cars & Transportation* category were most often negative.

In terms of issue coverage, there were issues in comments that were presented more favorably by user than the issues presented in posts. Issues found to be

significantly more likely to be in positive comments included “architecture & building technology” (52.4%), “automobiles (positive)” (69.1%), “other transportation (positive)” (62.5%), “recycling/ reuse/ waste reduction” (53.1%), “business policies & activities (positive)” (67.6%), “environmental policy & legislation (positive)” (70.8), and “citizens (positive)” (82.9%), as well as in two emergent issues, “family” (58.3) and “art” (60.5%). It is not surprising that positive issue categories were coded positively. User comments about favorable aspects of issues tended to prompt users to comment positively about the issues.

A similar trend was found with negative dimensions of issues. These issues included “automobiles (negative)” (72.4%), “other transportation (negative)” (81.8%), “global warming/ climate change” (57.1%), “pollution” (52.8%), “business policies & activities (negative)” (75.2%), “environmental policy & legislation (negative)” (76.7%), “politicians (negative)” (78.9%), “citizens (negative)” (65.4%), and the “oil/ petroleum industry” (54.3%).

RQ2e: Is there a difference between blogs posts and blog comments with regard to the valence of issue categories appearing on TreeHugger.com?

The positive lean in comments by TreeHugger category was weaker than with the posts. Only two categories, *Fashion & Beauty* (61.5%) and *Take Action* (63.3%), were more than 50 percent positive and four issues were less than 40 percent positive, as opposed to only one category being less than 40 percent positive for posts. Two TreeHugger categories were shown to be significantly different in their post & comment valences. Both *Cars & Transportation* [$X^2 (1) = 6.775, p \leq .01$] and *Design & Architecture* [$X^2 (1) = 22.128, p \leq .001$] were shown to be significantly more

positive in post coverage than in comments.

Results show a statistically significant difference between posts and comments for several issues. Each of the following issues was significantly more likely to be positive in TreeHugger posts: “architecture & building technology” [$X^2 (1) = 13.745, p \leq .001$], “gadgets & purchasable products” [$X^2 (1) = 17.448, p \leq .001$], “energy conservation” [$X^2 (1) = 12.968, p \leq .001$], “recycling/ reuse/ waste reduction” [$X^2 (1) = 15.341, p \leq .001$], “sustainable energy sources” [$X^2 (1) = 7.826, p \leq .001$], and “science & technology” [$X^2 (1) = 4.226, p \leq .05$]. Likewise, “business policies & activities (negative)” was presented more in both negative posts and negative comments, but it was presented significantly more often in the negative comments [$X^2 (1) = 5.985, p \leq .05$]. The final issue discussed in significantly different amounts of posts and comments was “pollution.” This issue appeared in significantly more negative comments [$X^2 (2) = 12.008, p \leq .01$] though this might be expected as it was more often in positive than negative posts.

RQ3a: What types of interactivity are present in blog posts and blog comments appearing on TreeHugger.com?

This study found there to be significantly more instances of textual interactivity than technical interactivity [$X^2 (1) = 180.045, p \leq .001$] when interactive elements were at all present (N=1681). When taken separately, the findings again display the technical differences. Posts were significantly more likely to use technical interactivity than textual interactivity [$X^2 (1) = 247.888, p \leq .001$] and comments were much more likely to include textual interactive elements than technical [$X^2 (1) = 640.875, p \leq .001$].

Considering that technical interactivity, primarily hyperlinks, are essentially ubiquitous in blog posts on TreeHugger and so rare in comments, it was not possible to perform a valid chi-square due to insufficient N sizes in the comment cells. It is likely that the use of hyperlinks and HTML tags have more to do with a commenter's level of experience with HTML code than anything else, though that relationship is outside the scope of this study.

Since textual interactivity had nothing to do with technical skill, there was essentially no barrier for users to make use of these elements. Regardless, when analyzing posts that used textual interactivity and their respective comments, this study found no significant difference in the number of comments that also used textually interactive features and those that did not, as seen in Table 6.3. Especially because technical interactivity was essentially ubiquitous in posts, there was a similar lack of significance regarding textual interactivity comments on these posts.

RQ3b: What are the most prevalent types of interactivity on TreeHugger.com?

Among all units analyzed, the most common form of interactivity was direct address, making up 40.9 percent of the overall interactive features, as seen in Table 7.1. The next most frequent types were hyperlinks (24.6%), interactive metacommunication (11.5%), direct appeal (9.6%), photo galleries (5.6%), embedded video (2.7%), asking questions (2.7%), and static downloadable content (1.0%). All other types of interactivity made up less than one percent of the overall interactivity.

RQ3c: Is there a difference between the types of interactivity used in blog posts and blog comments on TreeHugger.com?

Blog posts had high frequencies for all technically interactive features for the reason stated above. As seen in Table 7.2, hyperlinks, the most frequent and only possible technical feature in comments, were present in only 2.1 percent of comments. In contrast, featured hyperlinks were present in 98.8 percent of blog posts.

No type of textual interactivity was found in significantly different frequencies in posts and comments. The biggest difference between the groups for textual interactive features was interactive metacommunication, present in 12.4 percent of comments and only 0.3 percent of all blog posts (Table 7.3). Since there were less than five instance of this feature in posts, no statistical difference can be determined.

This study seeks to make an advance in metacommunication frame literature by considering the possibilities afforded by blogs as a medium. To do this, instances where a blog writer or commenter discussed the issue at hand by directly addressing another user or the TreeHugger blogger regarding their writing were coded as interactive metacommunication. The type of interactive metacommunication most often used in user comments was debate, present in 35.4 percent of comments. This was followed in prominence by reinforcement (22.4%), criticism (22.0%), and compliment (9.8%), as shown in Table 8 [$X^2(8) = 161.012, p \leq .001$].

The average number of comments within a week across all posts was 5.017 per post. This figure for only posts that featured technical interactivity was 5.021. The average number per post when textual interactivity was present was 4.671.

As seen in Table 7.4, when the mean numbers of comments for posts with each type of interactivity was calculated there were variations. The most notable of these

was for posts with surveys. Blog posts that featured surveys had an average of 10.6 comments, over twice the number in the overall sample.

RQ4a: What is the frequency of metacommunication present in blog posts and blog comments appearing on TreeHugger.com?

The metacommunication frame appears in 96.4 percent of blog posts on TreeHugger, making it nearly a requisite for posting an article (Table 9). As with the high level of technical activity in posts, much of the high presence of the metacommunication frame in posts is due to hyperlinks being used to cite other media sources as well as other TreeHugger articles.

As shown in Table 9, the metacommunication frame was present in a significantly less proportion of the user comments than the posts [$X^2(1) = 303.209, p \leq .001$]. The frame was present in less than half of the comments (44.9 percent).

RQ4b: Is the focus of metacommunication in the blog posts and blog comments internal/self-referential or external/strategy process?

In the case of blog posts, the metacommunication frame was significantly more focused on the internal communication of TreeHugger than external media or other actors' communication strategies when present [$X^2(1) = 24.592, p \leq .001$] (Table 9). As seen in Table 10, this internal, or self-reflexive, focus was specifically focused significantly more likely within TreeHugger posts than on other TreeHugger material (e.g., static guides, other Discovery Communications websites) or user-generated content [$X^2(2) = 866.046, p \leq .001$]. There was no statistically significant difference between the frequencies of the latter two.

When the frame was focused externally, it was significantly more likely to be directed at the mainstream media than the next highest focus [$X^2(1) = 32.841, p \leq .001$]. Interestingly, 42.2 percent of the externally focused frames were referencing the mainstream media while the next most frequent target, other blogs, was referenced in only 19 percent of the frames.

As with the blog posts, the focus of the metacommunication frame in comments was also significantly more directed internally at TreeHugger content or other user comments [$X^2(1) = 121.128, p \leq .001$]. This occurred in 418 of the 605 comments with the metacommunication frame as opposed to only 227 comments where it was externally focused as seen in Table 9.

Unlike with the blog posts, there was no significantly dominant focus of external metacommunication frames in user comments. The top three external categories referenced in the external frames were commercial companies (21.8%), mainstream media (19.7%), and other blogs (12.2%).

RQ4c: What is the difference between the focus of metacommunication in blog comments and blog posts appearing on TreeHugger.com?

This study found several differences between the target of external metacommunication frames in blog posts and user comments (Table 11). Metacommunication frames were more likely to be directed toward other blogs in posts than in comments (19.0% and 12.2%, respectively) [$X^2(1) = 4.171, p \leq .05$]. This was also the case regarding the mainstream media with 42.2 percent of external metacommunication frames directed at it as opposed to only 19.7 percent in user comments [$X^2(1) = 28.651, p \leq .001$].

User comments were found to contain significantly more external metacommunication frames directed toward two groups as well: commercial companies and non-political individuals or persons. Commercial companies were referenced in 21.8 percent of these frames in user comments and only 11.2 percent in the TreeHugger posts [$\chi^2(1) = 10.018, p \leq .01$]. The external metacommunication frames were directed toward non-political persons in 7.4 percent of the applicable user comments, while only 1.9 percent of blog posts [$\chi^2(1) = 8.464, p \leq .01$].

VI. Discussion

This thesis analyzed the category and issues related to each blog post and user comment in order to understand if TreeHugger and its visitors were discussing the same things. As the results revealed, comments and posts shared four of their five respective top TreeHugger categories. One could assume that much of this similarity is due to the simple fact that comments are likely to address categories and issues appearing in posts. That cannot be the full explanation however, as there would still need to be sufficient interest in those categories for people to want to contribute to the conversation. Additionally, users have demonstrated here, and elsewhere, that topics of importance to them often take precedent in online comments.

More interesting are the differences between blogger and user activity in the categories. The first and arguably most notable difference was in *Cars & Transportation* activity. This TreeHugger category was one of the most frequent in both posts and comments, however there was a significantly greater percentage of comments here than blog posts. This would imply that either TreeHugger did not find the general topic worth discussion as much as the users. Since *Cars & Transportation* was one of the top categories for posts, it is clear that users found it more interesting and engaging.

As Kent (2008) asserts, visitors to niche blogs such as TreeHugger are often experts in the subject, whether formally or self-educated. Since the commenters on TreeHugger are likely to be actively-minded environmentalists, this could indicate that the ecological impact of transportation is a topic of great interest within the

environmental community. That assumption might be farther reaching than this study can accurately indicate, but nevertheless it is clear that discussion in the topic is interesting to TreeHugger readers. Thus, it is in the blog editors' interest to continue, or increase, discussion of the related subjects.

The other two TreeHugger categories that showed significant differences between posts and comments were *Take Action* and *TreeHugger Exclusives*. In both cases the frequency of blog posting was greater than the user comment activity. These are both TreeHugger-specific categories, and less substantive than the others, so this result is not surprising. *TreeHugger Exclusives* were often regular features such as "Today on Planet Green" (a series of links to a TreeHugger sister-site) and "Carnival of the Green" (directing readers to the week's environmental blog carnival¹⁰), which do more linking to content than providing it. Upon visiting TreeHugger more recently, it seems that this category involves more substantive content, so this difference may have changed since data coding for this thesis. The *Take Action* category frequently consisted of event announcements and the category was generally inconsistent. Since TreeHugger is an international blog, local events are unlikely to appeal to the majority of readers.

What the deficit of user comments in these categories seems to demonstrate is the value that readers place on substantive articles, at least as topics of discussion. Website traffic statistics would be necessary to judge whether people were truly less interested in these categories, but they were not popular sources of conversation online.

Just as there were differences between posts and comments in some TreeHugger categories, there were also many differences between coverage of specific issues. A full list of issues discussed in significantly different amounts is above, but the issues found to be most different were energy conservation, recycling, food, positive business activities, resource conservation, positive discussion of citizens, global warming, positive discussion of celebrities, environmental education, positive discussion of scientists, positive discussion on environmental policy, and special events.

All of these issues were covered significantly more by posts than comments. These results are even more telling of the different topic priorities. It seems reasonable to assume that the deficit in comment coverage means that TreeHugger may be covering certain issues more than necessary. We cannot assume that all of the differences reflect a lack of reader interest since some of them occur in the most popular issues for commenters. If the TreeHugger bloggers were to decrease any coverage because of these results it would be better to do so for those with the lowest comment frequencies.

In understanding the kind of discussion and interaction going on in a blog like TreeHugger, it is helpful to know the tone of that discussion. Several possible explanations exist to help explain differences in post and comment valence for issues.

The first notable finding is that both posts and comments were mostly positive. It stands to reason that an ongoing discussion, whether online or offline, would be difficult to maintain if it was primarily negative. Positive valence in posts

manifested in different ways, however. Some articles discussed a story openly praising the outcome. In a February 11 article, "High school homework: Make an electric car," blogger Michael Graham Richard (2008a) wrote about students at a Michigan high school who were converting an older car to an electric car. He wrote,

"We don't remember doing cool stuff like that in high school... Seems like we missed all the fun. Students of Napoleon High School in Jackson, Michigan, will convert a 1995 Saturn SP1 into an electric car this spring. ... Battery range for the car is expected to be about 70 miles (115 kilometers), but the knowledge and inspiration given to the students will surely be priceless.

Another post, "Techno-urban survivalism: Bauhaus greenhouse tomatoes for the masses," displayed positive valence through general optimism rather than specifically praising one person or event. Inspired by a New York Times article about young families leaving cities in a "'voluntary simplicity' movement," the blogger offers tips and resources for people who want to have a simpler, less impactful existence but cannot move to do so. For example,

For those who prefer not to live on the road - an absurdly money- and climate-oblivious choice in the face of What Happens When Gasoline Exceeds US\$7.00 Per Gallon? - and who might instead prefer a community-based expression of simplicity, there is an easy alternative for the suburban dweller: work with local government to build a transition town. (TreeHugger has a lengthy series of posts on the transition town movement that has taken Europe by storm, but which has apparently only begun to make inroads in North America) (Laumer, 2008).

Looking deeper, the results reveal that while the positive slant dominates blog posts, that is not the case with comments.

The fact that the majority of posts were positive in tone and the minority was negative seems appropriate. A consistently negative website is one that people might be less interested in frequenting. TreeHugger is a professional blog with corporate

ownership and a number of advertisers, so maintaining readership and advertiser relationships is important. The fact that negative posts are not only less than positive, but also less frequent than neutral posts supports this idea as well. Examples of negative posts include posts about Bush administration-proposed legislation to drastically ease restrictions on logging old-growth forests (Jacquot, 2008a), lead poisoning in Australian rainwater tanks (McLaren, 2008), and the new, poorly designed taxi cab built by Ford (Richard, 2008b).

The significantly more negative valence in user comments is a more complex result to interpret. While this study did not systematically analyze the substantiveness of user comments, observation reveals a wide range of substance in user comments. For example, in a February 17 article about killing sharks for their fins, one commenter tells a story of how he once had shark fin soup, how the finning process works, his personal opinions on fishing and finning. Another commenter simply responds, “Poor sharks :-(,” complete with frowning emoticon. This example also shows how negatively valenced comments are not necessarily adversarial (Jacquot, 2008b) – making this operational distinction clearly relevant.

That said, while some comments analyzed in this study could certainly be considered unconstructive, there were very few comments that seemed to contribute nothing but negative tone. Negatively valenced comments usually expressed objection to the activities of an outside entity, argument against a particular idea or concept, or disagreement with TreeHugger’s interpretation of a story.

The negative, disagreeable comments display a beneficial quality to the blog as well. As presented in the literature review, the success of the public sphere

demands deliberative discussion and vigorous debate. While this study does not intend to argue for TreeHugger as an ideal public sphere, the strong disagreement, even if expressed in a negative tone, does contribute to the debate. It would be absurd to label some of the negativity in the TreeHugger comments as “deliberative democracy,” but such is the nature of open discussion.

TreeHugger is similar to the Minnesota E-Democracy website described by Dahlberg (2001) in that respect. Comments are moderated the first time someone posts, but there were explicit examples of criticism direct at TreeHugger and Discovery Communications. Users would occasionally comment that they did not think a particular post belonged on TreeHugger. The commenter “jdisa” remarked on such a post on May 22:

I don't think this story merits a post on TreeHugger. Nor do I think the author's rather bizarre conclusion, as many other commenters have pointed out, merits much cognizance.

I'm not sure if it's TreeHugger's newly acquired corporate masters, or a simple shift in the way of things, but I'm less and less inclined to read this site these days (jdisa, 2008).

If TreeHugger were actually the preeminent hub for online environmental discussion, Dahlberg's assertions that “the rapid commercialization of cyberspace makes it increasingly difficult for non-profit, volunteer-based projects such as Minnesota E-Democracy to compete for the attention and time of online participants” would be supported (2001, p. 627). As the quote above displays, the effects of commercialization on TreeHugger significantly diminish the site's value for some readers.

As noted above, the general difference between post and comment valence was that blog posts were significantly more positive and comments significantly

more negative. Though they differed greatly when compared to each other, the results for comment valence when broken down by their respective posts' valence were revealing. This study's results showed that in the cases of both positive and negative posts, those qualities tended to be mirrored in the comments. Positive posts had significantly more positive comments and negative posts had significantly more negative comments.

This result shows that blog writers may have influence over how issues will be addressed by reader comments. This valence transfer does not necessarily mean that the blog comments were negative regarding the same issue or category. In the case of an April 29 article, "18.6 million empty houses in America," the article paints a sad picture of 25 to 1 ratio of empty houses to homeless people in the United States. The writer, Lloyd Alter, then asserts that not making use of these buildings for housing the homeless is "a shocking misallocation of resources, materials and energy." The commenter, "Goods aren't free," later questions this position, saying, "So what? Since when did being homeless bestow a right on anyone to a home?" In a subsequent exchange with "But Free's Good" the commenter says that allocating empty houses for housing the homeless has resulted in "crack dens" (Alter, 2008c).

It is difficult to say the cause of post-comment valence relationship. It is possible that by presenting information in a negative tone encourages further negatively valenced argument. This may be especially true when presenting a clear position rather than just facts. It is also possible, and maybe more likely, that simply by choosing topics that may tend to be discussed negatively or positively by the environmental community TreeHugger breed similar responses. This is not directly

related to those issues that were most often discussed negatively. Building technology can be either good or bad for the environment. Stories about building technology that hurts the local ecosystem may engender more negative comments and vice versa. Either way, the blog writer's choices could possibly influence the kind of discussion that happens in the comment section, but further study is necessary to understand this relationship.

Understandably, the TreeHugger categories that tend to be more "lifestyle" type stories are more likely to be positively valenced. These include *Culture & Celebrity* and *Fashion & Beauty*. It would certainly be possible for TreeHugger to write negative posts about cosmetics tested on animals or similar issues, but considering the significantly positive nature of posts overall it makes sense that these categories would be minimally negative. *Fashion & Beauty* was completely positive in valence, with posts covering topics such as Hollywood events that used environmentally friendly goods and various organic or recycled clothing. The only *Culture & Celebrity* that was negative covered a documentary on the controversial agriculture company Monsanto. The negativity in the post was directed toward the company, making coverage of actual cultural subjects essentially all positive.

Interestingly, the readers valenced both of these categories negatively in almost 40 percent of their comments. For example, one *Fashion & Beauty* post accounted for nine out of the 13 comments for that category. The post, titled "Predict the suit of the future for a chance to win," asked readers to share what they thought men's suits would be like in the future. Most commenters followed this prompt to some extent. Three of the commenters voiced objections. The first did not object to

the ideas put forward in the post, but brought into the conversation his disappointment with not being able to find organic cotton suits anywhere. The second rejected one of the post's points that PET (polyethylene terephthalate) plastic recycled suits were good, saying that they were uncomfortable, impractical, and that the use of PET plastic was unacceptable in the first place. The third negative commenter flatly made the argument that suits were categorically bad because of the superfluous fabric and the chemicals needed for dry cleaning (Kloosterman, 2008b).

In the case of this posts, all three negative comments brought new elements of the issue to light. No matter if their suggestions were realistic, they were constructive in providing new perspectives to the discussion. Similarly, in a *Fashion & Beauty* post about model Cindy Crawford being named as the new “eco-everywoman” by *Vanity Fair*, one commenter called TreeHugger out on propagating the designation by expressing her frustration with celebrities being highly praised for minimal actions (DiCamillo, 2008).

Analysis of comment valence by category revealed further support for a possibly strong spirit of debate in the TreeHugger comments. The four TreeHugger categories with the largest numbers of comments (i.e., *Business & Politics*, *Cars & Transportation*, *Design & Architecture*, *Interact*) were also the most evenly valenced. This suggests that the more active users are, the more vigorous the debate. These are also arguably the four most consequential, or serious, categories, either raising relatively more important issues (compared to stories about models and suits) or, in the case of *Interact*, directly requesting reader input and featuring stories suggested by readers. Other than surveys and quizzes, *Interact* was made up by “Most

Huggable” posts that featured stories from TreeHugger’s social news site, Hugg.com, and “From the Forums” posts that selected especially active forum threads to continue in the blog.

This continued for the individual issues. The majority of issues featured in similarly significantly valenced posts and comments were those already valenced issues (e.g., “business policies & activities (positive)”, “business policies & activities (negative)”). However, when those split issues were combined (i.e., business policies & activities as a whole), valence similarities in the posts and comments disappeared.

The only two issues that were significantly featured in similarly valenced posts and comments outside of those previously mentioned were "architecture & building technology" and "recycling/ reuse/ waste reduction." Positive discussion of recycling is to be expected on an environmental blog. Positive coverage of architecture may be less obvious. Most instances of that issues’ coverage had to do with new environmentally friendly building practices (e.g., prefab construction, energy conserving design, space saving).

Overall, this study is unable to identify a strong connection with how the tone with which TreeHugger posts addressed a category and how the comments subsequently discussed it. Considering the similarity between positive or negative posts and similarly valenced comments, no category-specific connection can be identified. The connections likely lie more with the categories themselves.

Much of the findings regarding interactivity, in particular for the technical features, relate strongly to the technical capabilities of the sub-media within blogs. Writers of blog posts are able to use HTML (hypertext markup language) code in

order to do a great variety of things within the posts. As mentioned above, the current state of online media is such that video, audio, pictures, and even surveys and quizzes are fairly easy to embed in websites. The blog comments are more limited in their ability to use HTML. The comment form notes that users may use HTML tags for style (e.g., italics, bold, underline). This also allows user to create hyperlinks in their comments.

So, the only technical feature available for commenters' use was hyperlinks, but the need for them to know a certain amount of HTML code to implement it was probably prohibitive to more widespread implementation. The almost polar differences in post and comment technical interactivity use was due more than likely to this disparity in how easy it was to implement them.

Though not actually using hyperlinks, at least 74 additional users included a URL in their comment. Commenter "Quinn" on the post, "Verdant vocations: A dentist?," disagreed with the necessity of some of the changes TreeHugger recommended to make dentistry more environmental. The commenter provides a thorough argument and concludes with, "There are also no studies that affirm the idea that amalgam poses any long term health concerns (see link). <http://www.ada.org/public/media/presskits/fillings/index.asp>," though it was not a hyperlink, just text (2008). Providing a URL for the ADA website further supports his argument with a reputable source. Referencing sources is a typical use of hyperlinks in blog comments that contributes to the discussion's value.

It is entirely possible that, was the tool in place, many of these comments would have used hyperlinks rather than just writing out the web address. Buttons to

add a hyperlink to a blog comment are not unusual on large blogs and are even present on many small, personal blogs. This might be a feature that TreeHugger may want to add considering less than one third of comments referring to web addresses did so with a link. Several of the posts providing URLs or links were referring to TreeHugger posts, but even if every one of the 104 comments were linking externally that would be only 7.7 percent of comments taking part in a practice that TreeHugger itself does.

Since the use of textual interactive features does not require any computer coding knowledge there was no barrier for use, resulting in more widespread presence in user comments. Interestingly, blog posts and user comments used textual interactivity in essentially equal proportions (43.5% and 43.1%, respectively). For individual types of textual interactivity, blog post and comment use of direct address (36.7% and 35%, respectively) and asking a question (2.4% and 2.3%, respectively) also enjoyed very similar frequencies, with use of direct appeal quite close as well (10.7 and 7.7%, respectively).

It is important to note that textual interactivity was used in posts and comments in different ways. In particular, asking questions appeared in posts primarily through surveys. These presented broad opinion questions, such as “Are you European in your driving habits?” (Alter, 2008e) and “Who [from the presidential candidates] do you agree with?” (Alter, 2008d). Comments tended to be much more specific in their queries. Users asked questions such as, “Is an iPhone as recyclable as any other cell phone? Is it as recyclable as a Blackberry or a Palm Treo?” (Tracy, 2008), “What are the real advantages of prefab?” (Ross, 2008), and

“Why again can't we get the Yaris in the US?” (WDW, 2008). One commenter did pose an open request for opinions. Considering what to use in small trashcans if plastic supermarket bags were made illegal, “sarah” [sic] asked,

Buying plastic bin bags would seem to defeat the point. I live in Toronto where they have a pretty good system - recycling and compostables get separated out. However, there are still things that can't go in either of those, so I do need a small amount of normal bin bags. So, any suggestions please? (2008)

The results regarding textual interactivity support previous research on blog comments and posts. In a study of blog posts and comments on celebrity blogs, Trammell (2004) found that commenters responded to other comments 39 percent and to the post 51.7 percent of the time. Her study also found that social interaction was commenters' primary motivation for contributing, present in 73.2 percent of those analyzed. Though not the primary reason found, blog posts also identified interaction as a motive in over 50 percent of cases (p. 25).

Celebrity blogs and environmental blogs are very different genres, but it is possible that the desire for social interaction can carry over to the more news and information environment of TreeHugger, resulting in frequent use of textually interactive features. In a few cases, TreeHugger commenters did actually refer to other frequent commenters that they had gotten to know on some level. Although some of the possible types of these features were not interpersonal within TreeHugger (i.e., “forward to a friend” link, email address/contact page), these types were never present in either posts or user comments. Therefore all of the textual interactivity found in TreeHugger was akin to Stromer-Galley's (2004) conception of interactivity-as-process described above.

The interesting finding regarding the effects of blog interactivity to user interactivity was that there were no significant findings. With posts featuring each type of technical and textual interactivity¹¹ taken separately, the frequency of comments with direct appeals, direct address, interactive metacommunication, and asking questions were calculated and compared. Though frequencies varied slightly, no significant result was seen to suggest a relationship.

What scholars and web editors can both take from this is that interactive features alone, regardless of type, cannot support a blog's community. This does not diminish their importance, however. The presence of these features across TreeHugger may be an attraction to readers, but, as far as how users engage with individual content on the website, other factors may have a greater effect as seen with the issues and categories above.

The lack of interaction between types of interactivity does not mean that use of particular interactive features have no effect whatsoever. Comparing the average number of comments by the kind of interactivity in the post showed some difference. The creation and implementation of survey posts does seem to be worth the effort at least as far as beginning conversation. Posts with surveys showed an average of twice as many comments within the first week. This result seems logical since surveys not only request that users choose an option from a list as quizzes do, but surveys request opinions as well. One TreeHugger post not in this study's sample is a survey asking readers what they thought of TreeHugger surveys. This meta-survey displays a certain amount of commitment to reader engagement (Alter, 2008b).

For an environmental blog or possibly other social issue niche blogs, directly requesting opinions through a multi-option survey may be helpful in engaging readers. Micropoll, the survey-creation service used by TreeHugger, is free and uses simple HTML code that bloggers can copy and paste into a post making barriers to use very low.

TreeHugger also makes use of several interactive features outside of the actual posts. The forums offer users a chance to bring up their own topics and have ongoing discussions on environmental topics as well as whatever else they find interesting. Some TreeHugger posts were identified as being inspired by the forums, including quotes from the user who began the thread and other participants. They also recently started a Twitter account (<http://twitter.com/treehugger>). The increasingly popular microblogging site enables direct interaction and quick responses.

The two major features that are no longer on TreeHugger are Hugg.com and Comment Central. Hugg.com was clearly inspired in name and spirit by Digg.com (<http://digg.com>), the social news site. On Hugg anyone could submit their environmental stories and then others would either raise or lower them in prominence by voting. Comment Central was simply a stream of every comment made on TreeHugger posts as they were added. Both of these acted to feature user-driven content but it seems neither was received well enough to continue.

Like their overwhelming impact on technical interactivity, hyperlinks greatly impacted the results of the metacommunication frame in blog posts. The feature is not as inherently metacommunicative as it is technical, but it facilitates citation of

other media very easily—a necessary task in a filter blog. Unlike most professional media, filter blogs openly depend on outside reporting for stories and will often contribute to the content with a different perspective, additional information, or will focusing on a specific element in the original story. In this way filter blogs are an inherently metacommunicative genre.

The user comments had significantly less use of the metacommunication frame with only 44.9 percent of comments using it. Nevertheless, the frame proved to be a major element of the user-generated material, supporting the assertion that metacommunication is a major macro-frame (Constantinescu & Tedesco, 2007). It is possible that this might not have been true twenty years ago, however the Internet as a "meta-medium" seems to encourage discussion of the media by both websites like TreeHugger and the general public (Levinson, 1999).

The fact that the focus of the metacommunication frame was more often internal for both posts and comments brings up interesting questions about how this site operates. As noted above, campaigns and online newspapers have been observed as hesitating to link externally in order to keep traffic on the site (Dimitrova et al, 2003, Stromer-Galley, 2000; Williams et al, 2005). While TreeHugger does plenty of external linking, the majority of posts referencing communication and the media, mostly through hyperlinks, are doing so internally. This seems to be easily attributed to the same motivations that the campaign and newspapers sites have, but done in a different way.

TreeHugger posts almost always linked to other TreeHugger content within the articles. Whether they did or not, there was still always an automatically

generated list of related posts before the comment section. This ensures that readers will have greater exposure to their content and thus their advertising. Even so, when compared to the results of the previously referenced studies on hyperlinking, TreeHugger linked out to a variety of types of sources in greater numbers than the newspaper and candidate sites' analyzed. Of course, those studies were conducted at least four years ago, during which time the mainstream media's online presence has evolved greatly. Regardless, the amount of external metacommunication, including hyperlinks, by TreeHugger is notable.

The focus of the external metacommunication frames in user comments and blog posts reveals differences between the two. The frames in posts referenced other blogs and the mainstream media significantly more than comments did. This difference reflects the nature of the filter blog. It also suggests that users were less interested in discussing environmental issues in terms of how others had already done so. Instead it seems that they were more interested in the unique conversation occurring on TreeHugger.

The two groups that comments focused on more in metacommunication frames support this. Users were twice as likely to reference the communication of commercial companies and almost four times as likely to reference communication by non-political individuals. By doing so, users showed interest in expressing their own opinions about the communication strategies of the actors rather than who else was saying what about them.

This seems to reveal a positive relationship between the bloggers and readers for discussing issues of interest. The bloggers begin the conversation by bringing in

stories from the available media then the users continue by concentrating on what the actors in a story are doing and saying. These roles are not mutually exclusive, but they do make sense in the building of a discursive community.

That these dual focuses exist and work in a thriving blog should mean at least one thing to blog editors covering niche issues: it is okay to leave the job of analysis to the blog readers. In a post on June 6, 2008, titled "A Picture is Worth... Surfriders' Catch of the Day," a media campaign from the ocean conservation group Surfriders is discussed. The group and their advertising firm packaged actual trash from California beaches on Styrofoam platters, mimicking the packaging of fish in supermarkets, making the point that these items are polluting the water that the fish come from. The only opinion that the TreeHugger writer offers is that the platter of found condoms is disgusting (Kloosterman, 2008a).

The very first commenter, "sterling" writes, "i hope those aren't styrofoam trays that they're using [*sic*]..." The trays' material was not mentioned in the blog post but nevertheless an active discussion appeared in the comments about the validity of the campaign considering the potential use of non-biodegradable materials (including some McLuhan-inspired commentary):

@Steffanie - "I'm pretty sure those are styrofoam trays and plastic wrapping.

Kind of defeats the purpose of their message. Fine if you want to get the message out about being environmentally responsible for your trash but you now helped create more that will end up in a landfill !!!

Hey Surfrider.....Couldn't you have thought of a better way to display the trash [*sic*]?!"

@Anne - "The medium **is** the message here. Since you can't actually eat these, if you buy them, you buy them as art."

@ray - "i'm not condoning their use of styrofoam, but the message is more about litter in streets and waterfront areas. many waterfront communities have stormwater catch basins that drain directly to the ocean. therefore, these 'catches of the day' are littler ending up the recieving waterbodies after storm events [*sic*]."

@GL - "I think the packaging adds to the point."

The conversation continues from there (Kloosterman, 2008a).

It is certainly possible that a TreeHugger writer could have started this line of discussion, but it didn't need to be. The blogger probably didn't leave out an opinion on the trays intentionally but leaving deeper analysis to the readers worked out. They ended up offering much more insightful and intelligent evaluation than the paid writer in this case.

Further support for the commenters' ability for discussion comes from an element with which this study attempts to add to metacommunication literature. Both posts and comments were analyzed for use of what we label as "interactive metacommunication." Since blogs, like offline interpersonal communication, offer the chance to respond directly to both another person's arguments as well as how they stated it, communication scholars need to consider the new ways to look at communication in the medium as well as elsewhere online. Classic and recurring theories should in no way be discarded, though we should recognize the opportunities afforded by new media.

This study considers user comments on blogs as adding to the content value of the website. As shown in the Surfrider example above, the users brought aspects of a story to light with valid points that were absent from the actual post. The user contributions then make those aspects salient for subsequent visitors, making the

reading experience different for them. A consequence of this is that the user-created content can affect the experience for other readers. The interactions between commenters regarding one another's arguments contribute to the tone and demeanor of the blog as a whole.

The finding that debate was the most frequent type of interactive metacommunication is positive in that this involves substantial comments regarding others' arguments. For example, in the February 11 post, "How can we 'uninvent' suburbia?," the commenter "Brennan" argues that suburban living is not inherently unsustainable. People need only use their yards to garden organically, composts, and even raise small animals such as chickens. Just about two hours later, commenter "stevejust" responds,

Brennan-- I like your positive spin on the future of suburbia, but there's two reasons why I'm not as positive on it. As anyone who's seen the movies "Subdivided" or "Crude Awakening" knows, there are some very alienating parts of non-human scale suburbia that cannot be overcome (Alter, 2008a).

He proceeds to provide to give two clear and well-composed arguments against a sustainable suburbia. His arguments could have been made simply in contribution to the article. By first referencing the previous comment he frames it as an oppositional extension of that comment. By doing so while directly addressing the other TreeHugger user he makes it into a discussion that all TreeHugger readers can benefit from.

Likewise, it is good to see reinforcement as the next most common. Reinforcement also refers to substantial comment, though in agreement rather than in opposition. An example from the post, "New York Times on living in 435 square

feet,” displays reinforcement as well as a blog comment convention that assists later readers. “Robert Jones” replies to a comment by “Glenn.” Robert Jones first quotes the earlier comment and then supports the assertion with evidence:

"There are still places where you could get a 2 bedroom home with a backyard for \$150K"

LOL. You just described my house. Well, it's my mom's house. She just bought it. It's pretty large, larger than I would like (2008).

Quoting passages from other commenters or the posts is frequently used as means of establishing context for an argument. Though done in an informal manner, “Robert Jones” supporting Glenn’s statement by noting an example of that assertion.

It is important to note that directly responding to another commenter does not constitute interactive metacommunication in and of itself. In the same post, Kasa also responds to Glenn, as well as the user “Jay,” though not regarding his statement.

@Glenn, Jay-

I have to say I was pleasantly surprised to see an affordable space in the Times Home section! It looks expensive, and the appliances definitely are, but when you only spend \$295k on your home, and build your own shelving and so on, you can afford that kind of thing. And if you are going to splurge, splurging on appliances is probably a good plan. You'll keep them forever (2008).

In this case, Kasa is engaging the other two commenters in conversation, though not regarding anything they specifically wrote. This is an example of direct address, but not interactive metacommunication.

The finding that criticism, negative sentiment without addressing the issues, is essentially in equal amounts as reinforcement and more than twice as frequent as compliments is less encouraging for TreeHugger. There is nothing wrong with the occasional comment that calls a writer or fellow commenter out for misrepresenting

information or failing to research well. The problem occurs when good argument and thoughtful writing is abandoned in order to simply be critical.

In a May 11, 2008, post titled, "Branding for Non-Profits - Why It's Important" (Stifelman, 2008), a guest writer from a brand-strategy agency describes how to use branding well for NGOs and uses several good examples. The post is arguably one of the best-written pieces of original content in this study's sample. The first commenter provides several more paragraphs of thoughtful reflection with what could be a blog post in itself. A commenter called "Tim" then briefly acknowledges the post by just saying, "Nice, but you spelled torture wrong." The following comment continues with, "What exactly is 'Toruture?'" Neither of the two latter comments contributes anything to the discussion. One questions whether they gave the content much thought if their only comment was on the misspelling of a single word (Stifelman, 2008).

The priority of criticism over compliment is also a reflection of the overall negative tone of the comments. It is important to note that, while they made up over one-fifth of interactive metacommunication, criticism only appeared in 36 comments out of the total 1,342 analyzed, or less than three percent. While they do not make up a significant amount of the entire body of comments, they do contribute to the interpersonal interactions.

Blog editors should not moderate negative comments out completely, though many bloggers do not allow malicious or vulgar language in their comment sections. What bloggers can do is to promote a positive, constructive tone in their writing. This is important especially in a context of social advocacy. This study showed that

tone in the posts can influence tone in comments, so bloggers should simply be aware of the precedent that they are setting.

VI.a Limitations

This study is not without limitations. Some people unfamiliar with blogs discuss them as a single type of medium. Discussion of “blogs” has to be done as the discussion of “magazines.” Just as there are thousands of genres and kinds of magazines with greatly varying quality so there are thousands of kinds of blogs. A blanket discussion of either is both futile and ignorant.

This thesis analyzed TreeHugger, the largest English-language environmental blog currently online. The results are thus most applicable to blogs of similar focus. Results regarding topics covered are especially limited to environmental discussion, though they show that disparate focuses can be present and blog editors should be aware of how this manifests on their websites.

The size of readership also made a big difference in the possibilities afforded to this study. Direct conclusions on how a blog community might operate are less applicable to smaller blogs. Nonetheless, understanding how a thriving blog community operates could be helpful to those who wish to grow and maintain their audience.

VI.b Future study

Fortunately for this study, commenters occasionally expressed their thoughts on the operation of TreeHugger explicitly, providing deeper understanding than only quantitative data can provide. Most of these comments were made out of frustration

however. Future study including survey data from both the bloggers and readers would help to know their relationship better as well as the motivations and expectations on either side.

Continuation of the questions asked in this study should be taken to other contexts. It would be interesting to see how well these results relate to analysis of other social advocacy blogs covering different issues. Also, since this is one of the first studies to cover filter blogs, further study of the genre is needed. Filter blogs are one of the most popular types, but many of the most popular ones focus on technology. Blogs like Lifehacker (www.lifehacker.com), Gizmodo (www.gizmodo.com), and Problogger (www.problogger.net) all have active communities. Conversations on such blogs that do not cover social advocacy issues are undoubtedly going to be different for those on TreeHugger in many ways.

One concept that would be helpful to look for in other filter blogs would be interactive metacommunication. This study proposed the reconception of metacommunication for blogs and other inherently interactive online media. The rise in websites that encourage and feature user feedback to the extent that blogs do necessitates exploration of how media creation works online. Further investigation of this concept would help to refine it.

Though countless related studies could be suggested, one that the study of active blogs would surely benefit from would be regarding sampling methodology. A study like the Riffe, et al. (1993) newspaper sampling study and Hester and Dougall (2007) online news sampling study would be of great help to future blog research. The short-term nature of campaign blogs makes using the entire body of posts

possible, but top blogs that span many years and post twenty to thirty posts per day present a greater challenge, especially when including the comments.

VII. Conclusion

The Internet has always been an interpersonal medium, allowing people to chat, send email, and share documents. It is only appropriate that news sources online should evolve from online versions of traditional, one-way, news media to a more social form. In doing so, writers for the Web need to be aware of how the informational interactions operate and what influence they have. This thesis attempted to answer some the questions involved with doing that at the same time as furthering communication scholarship's understanding of the rising medium of blogs.

This study showed that bloggers do have influence on how users will respond in comment sections. It also showed that the blog readers, at least for niche social advocacy blogs, are not acquiescent to the topics, tone, or type of interaction set by bloggers. Content may be king, but the creation of content is no longer limited by ownership.

This kind of collaborative news analysis contributes to the idea that metacommunication in the media is not a bad thing, but it can help to explore various sides of a story (Williams, 2006). Issues discussed through the frame of how other media creators see them brings different ideas to the table and recognizes that news is no longer unidirectional—even if that method does carry risks.

It would behoove bloggers to understand what their writing's effect can be and to be aware that they are not in full control—which can be a good thing. By learning the subjects that users like talking about, valencing the conversation intentionally, and seeking out interaction through user-directed means such as

surveys, bloggers can increase their influence while building a platform for constructive dialogue and debate.

VIII. References

- Aherns, F. (2007, August 6). Discovery brings green to the masses [Electronic Version]. *Washington Post*. Retrieved September 25, 2008, from http://www.washingtonpost.com/wp-dyn/content/article/2007/08/05/AR2007080501182_pf.html
- Alter, L. (2008a, February 11). How can we 'uninvent' suburbia? Message posted to http://www.treehugger.com/files/2008/02/how_can_we_unin.php
- Alter, L. (2008b, February 25). Survey: What do you think of our surveys? Message posted to <http://www.treehugger.com/files/2008/02/survey-of-surveys.php>
- Alter, L. (2008c, April 29). 18.6 million empty houses in America. Message posted to <http://www.treehugger.com/files/2008/04/186-million-empty-houses.php>
- Alter, L. A. (2008d, April 30). Survey: Do we need a gas tax holiday? Message posted to <http://www.treehugger.com/files/2008/04/survey-gas-tax.php>
- Alter, L. A. (2008e, May 22). Survey: How do you use your car? Message posted to <http://www.treehugger.com/files/2008/05/survey-how-do-you-use-car.php>
- Bennett, W. L. & Entman, R. M. (2001). The big span. Strategic communication and the transformation of pluralist democracy. In W. L. Bennett & R. M. Entman (Eds.), *Mediated politics: Communication in the future of democracy* (pp. 279-298). Cambridge, MA: Cambridge University Press.
- Beyers, H. (2006). What constitutes a good online news site? A comparative analysis of

- American and European awards. *Communications*, 31, 215-240.
- Bichard, S. L. (2006). Building blogs: A multi-dimensional analysis of the distribution of frames on the 2004 presidential candidate web sites. *Journalism & Mass Communication Quarterly*, 83(2), 329-345.
- Bimber, B. (1998). The Internet and political transformation: Populism, community, and accelerated pluralism. *Polity*, 31(1), 133-160.
- Bimber, B. (2000). The study of information technology and civic engagement. *Political Communication*, 17, 329-333.
- Blood, R. (2002). *The weblog handbook: Practical advice on creating and maintaining your blog*. Cambridge, MA: Perseus Publishing.
- Blog Carnival, LLC. (2009). Frequently Asked Questions Retrieved April 14, 2009 from <http://blogcarnival.com/bc/faq.html>
- Brainard, C. (2008, April 24). 2008 green issues guide [Electronic Version]. *Columbia Journalism Review*. Retrieved October 10, 2008, from http://www.cjr.org/the_observatory/2008_green_issues_guide.php
- Buchstein, H. (1997). Bytes that bite: The Internet and deliberative democracy. *Constellations*, 4(2), 248-263.
- Bucy, E. P. (2004). Interactivity in society: Locating an elusive concept. *The Information Society*, 20, 373-383.
- Bystrom, D. G., Banwart, M. C., Kaid, L. L., & Robertson, T. A. (2004). Webstyle: Communication messages through candidates' web sites. In *Gender and Candidate Communication* (pp. 113-142). New York: Routledge.
- Cammaerts, B., & Van Audenhove, L. (2005). Online political debate, unbounded citizenship,

- and the problematic nature of a transnational public sphere. *Political Communication*, 22, 179-196.
- Chyi, H. I., & McCombs, M. (2004). Media salience and the process of framing: Coverage of the Columbine school shootings. *Journalism & Mass Communication Quarterly*, 81(1), 22-35.
- Coleman, R., Lieber, P., Mendelson, A. L., & Kurpius, D. D. (2008). Public life and the Internet: If you build a better website, will citizens become engaged? *New Media & Society*, 10(2), 179-201.
- Constantinescu, A. R., & Tedesco, J. C. (2007). Framing a kidnapping: Frame convergence between online newspaper coverage and reader discussion posts about three kidnapped Romanian journalists. *Journalism Studies*, 8(3), 444-464.
- Cooper, S. D. (2006). *Watching the watchdog: Bloggers as the fifth estate*. Spokane, WA: Marquette Books.
- D'Angelo, P. (1999). *Framing the press: A new approach to assessing the cynical nature of press self-coverage and its implications for information processing in the political campaign context*. Paper presented at the 49th Annual conference of the International Communication Association.
- D'Angelo, P., & Esser, F. (2003). Metacoverage of the press and publicity in campaign 2000 network news. In L. Kaid, J. C. Tedesco, D. Bystrom, & M. S. McKinney (Eds.), *The millennium election: Communication and the 2000 campaign* (pp. 89-103). Lanham, MD: Rowman and Littlefield.
- Dahlberg, L. (2000). The Internet and the public sphere: A critical analysis of the possibility of online discourse enhancing deliberative democracy. Unpublished doctoral

- dissertation. Massey University, New Zealand.
- Dahlberg, L. (2001). The internet and democratic discourse: Exploring the prospects of online deliberative forums extending the public sphere. *Information, Communication & Society*, 4(4), 615-633.
- Dahlberg, L. (2005). The Internet as public sphere or culture industry? From pessimism to hope and back. *International Journal of Media and Cultural Politics*, 1(1), 93-96.
- Dahlberg, L. (2007). The Internet, deliberative democracy, and power: Radicalizing the public sphere. *International Journal of Media and Cultural Politics* 3(1), 47-64.
- Dahlgren, P. (2005). The Internet, public spheres and political communication: Dispersion and deliberation. *Political Communication*, 22, 147-162.
- Dasgupta, S. (2006). *Encyclopedia of virtual communities and technologies*. Hershey, PA: Idea Group Reference.
- de Vreese, C., & Boomgaarden, H. (2003). Valenced news frames and public support for the EU. *Communications*, 28, 361-381.
- de Vreese, C. H., Peter, J., & Semetko, H. A. (2001). Framing politics at the launch of the Euro: A cross-national comparative study of frames in the news. *Political Communication*, 18, 107-122.
- Dean, J. (2001). Cybersalons and civil society: Rethinking the public sphere in transnational technoculture. *Public Culture*, 13(2), 243-265.
- Dean, J. (2003). Why the net is not a public sphere. *Constellations*, 10(1), 95-112.
- DiCamillo, K. (2008, April 29). Cindy Crawford is our new “eco-everywoman.” Message posted to <http://www.treehugger.com/files/2008/04/cindy-crawford-pur-campaign.php>

- Dimitrova, D. V., Connolly-Ahern, C., Williams, A. P., Kaid, L. L., & Reid, A. (2003). Hyperlinking as gatekeeping: Online newspaper coverage of the execution of an American terrorist. *Journalism Studies*, 4(3), 401-414.
- Dimitrova, D. V., Kaid, L. L., Williams, A. P., & Trammell, K. D. (2005). War on the web: The immediate news framing of Gulf War II. *Press/Politics*, 10(1), 22-44.
- Doctorow, C., Dornfest, R., Johnson, J. S., Powers, S., Trott, B., & Trott, M. G. (2002). *Essential blogging*. Sebastopol, CA: O'Reilly.
- Endres, D. & Warnick, B. (2004). Text-based interactivity in candidate campaign Web sites: A case study from the 2002 elections. *Western Journal of Communication*, 68, 322-342.
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51-58.
- Esser, F. (1999). 'Tabloidization' of news: A comparative analysis of Anglo-American and German press journalism. *European Journal of Communication*, 14(3), 291-224.
- Esser, F., Reinemann, C., & Fan, D. (2000). Spin doctoring in British and German election campaigns: How the press is being confronted with a new quality of political PR. *European Journal of Communication*, 15(2), 209-229.
- Esser, F., Reinemann, C., & Fan, D. (2001). Spin doctors in the United States, Great Britain, and Germany: Metacommunication about media manipulation. *Press/Politics*, 6(1), 16-45.
- Esser, F., and D'Angelo, P. (2003). Framing the press and the publicity process: A content analysis of meta-coverage in campaign 2000 network news. *American Behavioral Scientist* 46(5), 617-641.

Esser, F., & Spanier, B. (2003). *Media politics and Media Self-coverage in the British press*.

Paper presented at the International Communication Association Annual Meeting.

Foot, K., & Schneider, S. M. (2002). Online action in campaign 2000: An exploratory analysis of the U.S. political web sphere. *Journal of Broadcasting & Electronic Media*, 46(2), 222-244.

Foot, K., Schneider, S. M., Dougherty, M., Xenos, M., & Larsen, E. (2003). Analyzing linking practices: Candidate sites in the 2002 US electoral web sphere [Electronic Version]. *Journal of Computer-Mediated Communication*, 8. Retrieved August 12, 2008, from <http://www3.interscience.wiley.com.ezproxy.lib.vt.edu:8080/cgi-bin/fulltext/120837884/HTMLSTART>

Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructivist approach. *The American Journal of Sociology*, 95(1), 1-37.

Garnham, N. (1992). The media and the public sphere. In C. J. Calhoun (Ed.), *Habermas and the Public Sphere: Studies in contemporary German thought* (pp. 359-376). Cambridge, MA: MIT Press.

Garnham, N. (2007). Habermas and the public sphere. *Global Media and Communication*, 3(2), 201-214.

Ghanem, S. (1997). Filling in the Tapestry: The second level of agenda-setting. In M. E. McCombs, Shaw, Donald. L., & Weaver, David, H. (Ed.), *Communication and Democracy: Exploring the intellectual frontiers in agenda-setting theory* (pp. 3-14). Mahwah, NJ: Lawrence Erlbaum Associates.

Gitlin, T. (2003). *The Whole World is Watching: Mass media in the making and unmaking of the New Left* (2nd ed.). Berkeley, CA: University of California Press.

- Goode, L. (2005). *Jurgen Habermas: Democracy and the public sphere*. London: Pluto Press.
- Guillory, B. (2007). *A framing analysis of science and technology weblogs: How is science presented by commentators?* Paper presented at the International Communication Association.
- Habermas, J. (1989). *The Structural transformation of the public sphere* (T. B. w. F. Lawrence, Trans.). Cambridge, MA: MIT Press.
- Herring, S. C., Scheidt, L. A., Bonus, S., & Wright, E. (2004). *Bridging the gap: A genre analysis of weblogs*. Paper presented at the 37th Annual Hawaii International Conference on System Sciences.
- Hester, J. B., & Dougall, E. (2007). The efficiency of constructed week sampling for content analysis of online news. *Journalism and Mass Communication Quarterly*, 84(4), 811-824.
- Insch, A. (2008). Online communication of corporate environmental citizenship: A study of New Zealand's electricity and gas retailers. *Journal of Marketing Communications*, 14(2), 139-153.
- Jacquot, J. E. (2008a, January 17). Bush administration seeks to approve 700% logging increase in Oregon's old-growth forests. Message posted to http://www.treehugger.com/files/2008/01/oregon_logging.php
- Jacquot, J. E. (2008b, February 17). Bycatch incidents and fin soup are wiping out shark populations worldwide. Message posted to http://www.treehugger.com/files/2008/02/bycatch_inciden.php
- Jarman, J., & McDonald, K. (1995). *Arguing across spheres: The impact of electronic LISTSERVs on public sphere argument*. Paper presented at the Alta Conference on

Argumentation.

jdisa. (2008, November 22). Canadian supremes throw out fly-in-water case [Msg 20].

Message posted to <http://www.treehugger.com/files/2008/05/canadian-supreme-court-rules-against-fly-in-water-case.php#comment-194920>

Johnson, T. J., & Kaye, B. (2004). Wag the blog: How reliance on traditional media and the Internet influence credibility perceptions of weblogs among blog users.

Journal & Mass Communication Quarterly, 81(3), 622-642.

Jones, R. (2008, February 20). New York Times on living in 435 square feet [Msg 16].

Message posted to <http://www.treehugger.com/files/2008/03/less-is-more-in-new-york.php#comment-181964>

Kaid, L. L., Postelnicu, M., Landreville, K. D., Williams, A. P., Hostrup-Larsen, C., Urriste, S.,

Fernandes, J., Yun, H. J., & Bagley, A. (2005). Campaigning in the new Europe: News media presentations of the 2004 European Union Parliamentary elections. In C.

Holtz-Bacha (Ed.), *Europawahl 2004: Massenmedien im Europawahlkampf* (European Vote 2004: The Mass Media in the European Election Campaign) (pp. 228-251).

Wiesbaden, Germany: VS-Verlag.

Kasa. (2008, February 20). New York Times on living in 435 square feet [Msg 10]. Message

posted to <http://www.treehugger.com/files/2008/03/less-is-more-in-new-york.php#comment-181631>

Kenix, L. J. (2008). Nonprofit organizations' perceptions and uses of the Internet. *Television & New Media*, 9(5), 407-428.

Kent, M. L. (2008). Critical analysis of blogging in public relations. *Public Relations Review*, 34, 32-40.

- Kent, M. L., Harrison, T. R., & Taylor, M. (2006). A critique of Internet polls as symbolic representation and pseudo-events. *Communication Studies*, 57(3), 299-315.
- Kent, M. L., & Taylor, Maureen (1998). Building dialogic relationships through the World Wide Web. *Public Relations Review*, 24(3), 321-334.
- Kent, M. L., & Taylor, M. (2003). Maximizing media relations: A web site checklist. *Public Relations Quarterly*, 48(1), 14-18.
- Kent, M. L., Taylor, M., & White, W. J. (2003). The relationship between Web site design and organizational responsiveness to stakeholders. *Public Relations Review*, 29, 63-77.
- Kerbel, M. R., & Bloom, J. D. (2005). Blog for America and civic involvement. *Press/Politics*, 10(4), 3-27.
- Kloosterman, K. (2008a, June 6). A picture is worth... Surfriders' catch of the day. Message posted to <http://www.treehugger.com/files/2008/06/surfriders-catch-day-saatchi.php>
- Kloosterman, K. (2008b, June 13). Predict the suit of the future for a chance to win. Message posted to <http://www.treehugger.com/files/2008/06/bagir-recycled-suit-contest.php>
- Krupp, F. D. (1986, November 20). New environmentalism factors in economic needs. *Wall Street Journal*, p. 1.
- Laumer, J. (2008, May 17). Techno-urban survivalism: Bauhaus greenhouse tomatoes for the masses Message posted to <http://www.treehugger.com/files/2008/05/urban-survivalism-bauhaus-greenhouse-tomatoes.php>
- Lee, J. K. (2006). *The blogosphere and the public sphere: Exploring possibility of the*

- blogosphere as a public sphere*. Paper presented at the 2006 International Communication Association Annual Meeting.
- Lee, J. K. (2007). The effect of the Internet on homogeneity of the media agenda: A test of the fragmentation thesis. *Journalism & Mass Communication Quarterly*, 84(4), 745-760.
- Levinson, P. (1999). *Digital McLuhan : a guide to the information millennium*. New York: Routledge.
- Li, D., & Walejko, G. (2008). Splogs and abandoned blogs: The perils of sampling bloggers and their blogs. *Information, Communication & Society*, 11(2), 279-297.
- Lichter, R. S., & Noyes, R. E. (1995). *Good intentions make bad news: Why Americans hate campaign journalism*. Lanham, MD: Rowman & Littlefield.
- MacDougall, R. (2005). Identity, electronic ethos, and blogs: A technologic analysis of symbolic exchange on the new news medium. *American Behavioral Scientist*, 49(4), 575-599.
- Mackay, J. B., & Lowrey, W. (2007). *The credibility divide: Reader trust of online newspapers and blogs*. Paper presented at the 57th Annual International Communication Association conference.
- Mazzoleni, G. & Schulz, W. (1999). "Mediatization" of politics: A challenge for democracy. *Political Communication*, 16, 247-261.
- McCollough, C. J. (2006). Media framing of the steroids scandal in Major League Baseball. Unpublished masters thesis. Virginia Polytechnic Institute and State University, Blacksburg, VA.
- McCombs, M., Llamas, J. P., Lopez-Escobar, E., & Rey, F. (1997). Candidate images in Spanish election: Second-level agenda-setting effects. *Journalism & Mass Communication*

Quarterly, 74(4), 703-717.

McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly*, 36, 176-187.

McDermott, M. (2008, September 30). It's still a dirty business: McCain v. Obama on clean coal. *TreeHugger*. Retrieved October 10, 2008, from <http://www.treehugger.com/files/2008/09/obama-versus-mccain-on-clean-coal.php>

McKee, A. (2005). *The public sphere: An introduction*. Cambridge: Cambridge University Press.

McLaren, W. (2008, April 30). High lead levels found in Australian rainwater tanks. Message posted to <http://www.treehugger.com/files/2008/04/lead-in-rainwater-tanks.php>

McMillan, S. J., Hoy, M. G., Kim, J., & McMahan, C. (2008). A multifaceted tool for a complex phenomenon: Coding web-based interactivity as technologies for interaction evolve. *Journal of Computer-Mediated Communication*, 13, 794-826.

McNair, B. (2000). *Journalism and democracy: An evaluation of the political public sphere*. London: Routledge.

McNutt, J. G., & Boland, K. M. (1999). Electronic advocacy by nonprofit organizations in social welfare policy. *Nonprofit and Voluntary Sector Quarterly*, 28(4), 432-451.

Menashe, C. L., & Siegel, M. (1998). The power of a frame: Analysis of newspaper coverage of tobacco issues -- United States, 1985-1996. *Journal of Health Communication*, 3, 307-325.

Moldoff, J., & Williams, A. P. (2007). Metacommunication and interactivity: A content

- analysis of audience framing on an advocacy group's blog. *Journal of International Business Disciplines*, 2(1), 53-69.
- Moldoff, J. (2007). A tale of two turnouts: Effects of news frame valence and substance on college students' levels of trust, cynicism, and political information efficacy. Unpublished masters thesis. Virginia Polytechnic Institute and State University, Blacksburg, VA.
- Pan, Z., & Kosicki, G. M. (1993). Framing analysis: An approach to news discourse. *Political Communication*, 10, 55-75.
- Papacharissi, Z. (2002). The virtual sphere: The internet as a public sphere. *New Media & Society*, 4(1), 9-27.
- Pein, C. (2005). Blog-gate: Yes, CBS screwed up badly in 'Memogate'--but so did those who covered the affair. *Columbia Journalism Review*, 43(5), 30-35.
- Perlmutter, D. D. (2008). *Blogwars*. New York, NY: Oxford University Press, Inc.
- The Pew Research Center for the People & the Press. (2008). Key news audiences now blend online and traditional sources. Survey Reports. Retrieved from <http://people-press.org/report/?pageid=1358>
- Potter, D. (2005). A victim of arrogance. *American Journalism Review*, 27(2), 1.
- Pryor, L. (2002). The third wave of online journalism [Electronic Version]. *Online Journalism Review*. Retrieved April 25, 2008, from <http://www.ojr.org/ojr/future/1019174689.php>
- Quinn (2008, January 7). Verdant vocations: A dentist? Message posted to http://www.treehugger.com/files/2008/01/verdant_vocatio.php#comment-168199

- Rafaeli, S. (1988). Interactivity: From new media to communication. In R. P. Hawkins, J. M. Wiemann, & S. Pingree (Ed.), *Advancing communication science: Merging mass and interpersonal processes*. Thousand Oaks, CA: Sage.
- Reese, S. D., Rutigliano, L., Hyun, K., & Jeong, J. (2007). Mapping the blogosphere: Professional and citizen-based media in the global news arena. *Journalism*, 8(3), 235-261.
- Richard, M. G. (2008a, February 11). High school homework: Make an electric car. Message posted to http://www.treehugger.com/files/2008/02/high_school_homework_make_a_n_electric_car.php
- Richard, M. G. (2008b, March 20). Transit connect taxi: Nigh try Ford, but you fail miserably. Message posted to <http://www.treehugger.com/files/2008/03/transit-connect-taxi-ford-fails-miserably-new-york-auto-show.php>
- Riffe, D., Aust, C. F., Lacy, S. R. (1993). The effectiveness of random, consecutive day and constructed week sampling in newspaper content analysis. *Journalism Quarterly*, 70(1), 133-139.
- Robinson, S. (2006). The mission of the j-blog. *Journalism*, 7(1), 65-82.
- Ross. (2008, May 22). Small lot prefab from resolution 4. Message posted to <http://www.treehugger.com/files/2008/05/small-lot-prefab-from-resolution-4.php#comment-194815>
- Sachsman, D. B., Simon, J., Valenti, J. M. (2006). Regional issues, national norms. *Science Communication*, 28(1), 93-121.

- sarah. [sic] (2008, June 18). Another village is plastic-bag free zone. Message posted to <http://www.treehugger.com/files/2008/06/another-village-goes-plastic-bag-free.php#comment-200062>
- Scheufele, D. A. (2000). Agenda-setting, priming, and framing revisited: Another look at cognitive effects of political communication. *Mass Communication & Society*, 3(2&3), 297-316.
- Schultz, T. (2000). Mass media and the concept of interactivity: An exploratory study of online forums and reader email. *Media, Culture & Society*, 22, 205-221.
- Schultz, T. (2006). Interactive options in online journalism: A content analysis of 100 U.S. newspapers [Electronic Version]. *Journal of Computer-Mediated Communication*, 5, from <http://www3.interscience.wiley.com/cgi-bin/fulltext/120837776/HTMLSTART>
- Semetko, H. A., & Valkenburg, P. M. (2000). Framing European politics: A content analysis of press and television news. *Journal of Communication*, 50, 93-77.
- Shabecoff, P. (2003). *A fierce green fire: The American environmental movement*. Washington, DC: Island Press.
- Short, J. Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. New York, NY: Wiley.
- Simons, H. W. (1994). "Going meta": Definition and political applications. *Quarterly Journal of Speech*, 80, 468-481.
- Smith, C. C. (2008). Technologies for transcending a focus on error: Blogs and democratic aspirations in first-year composition. *Journal of Basic Writing*, 27(1), 35-60.
- Smolkin, R. (2004). The expanding blogosphere. *American Journalism Review*, 26(3), 38-43.

- Stifelman, J. (2008, January 19). Branding for non-profits - Why it's important. Message posted to <http://www.treehugger.com/files/2008/05/branding-non-profits.php>.
- Stromer-Galley, J. (2000). On-line interaction and why candidates avoid it. *Journal of Communication*, 50(4), 111-132.
- Stromer-Galley, J. (2002). New voices in the public sphere: A comparative analysis of interpersonal and online political talk. *The Public*, 9(2), 23-41.
- Stromer-Galley, J. (2003). Diversity of political conversation on the Internet: Users' perspectives [Electronic Version]. *Journal of Computer-Mediated Communication*, 8. Retrieved October 9, 2008, from <http://www3.interscience.wiley.com/cgi-bin/fulltext/120837879/HTMLSTART>
- Stromer-Galley, J. (2004). Interactivity-as-product and interactivity-as-process. *The Information Society*, 20, 391-394.
- Stromer-Galley, J. & Foot, K. A. (2002). Citizens' perceptions of online interactivity and implications for political campaign communication [Electronic Version]. *Journal of Computer-Mediated Communication*, 8. Retrieved September 18, 2008, from <http://jcmc.indiana.edu/vol8/issue1/stromerandfoot.html>
- Sundar, S. S. (2000). Multimedia effects on processing and perception of online news: A study of picture, audio, and video downloads. *Journalism & Mass Communication Quarterly*, 77(3), 480-499.
- Swanson, D. L., & Mancini, P. (1996). *Politics, media, and modern democracy: An international study of innovations in electoral campaigning and their consequences*. Westport, CT: Praeger.

- Technorati, Inc. (2008a). Technorati Media. Retrieved September, 11, 2008, from <http://technoratimedia.com/>
- Technorati, Inc. (2008b). Technorati Popular: Top 100 blogs. Retrieved September 11, 2008, from <http://technorati.com/pop/blogs/?page=2>
- Technorati, Inc. (2008c). State of the Blogosphere 2008 - Day 1: Who are the bloggers? Retrieved October 16, 2008, from <http://www.technorati.com/blogging/state-of-the-blogosphere/who-are-the-bloggers/>
- Tedesco, J. C. (2004). Changing the channel: Use of the Internet for communicating about politics. In L. L. Kaid (Ed.), *Handbook of Political Communication Research* (pp. 507-532). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Tedesco, J. C. (2006). Web interactivity and young adult political efficacy. In A. P. Williams, & Tedesco, John C. (Ed.), *The Internet Election: Perspectives on the Web in campaign 2004*. Lanham, MD: Rowman & Littlefield Publishers, Inc.
- Thorson, K., & Wise, K. (2007). *Blogging for participants: Framing the candidate blog for mobilization*. Paper presented at the International Communication Association 2007 Annual Meeting.
- Tracy. (2008, April 30). iPhone: Greener gadget yes or no? Message posted to <http://www.treehugger.com/files/2008/04/iphone-greener-gadget-touch-screen-updatable-software.php#comment-190338>
- Trammell, K. D. (2004). Celebrity blogs: Investigation in the persuasive nature of two-way communication regarding politics. Unpublished doctoral dissertation. University of Florida.

- Trammell, K. D. (2006). Blog offensive: An exploratory analysis of attacks published on campaign blog posts from a political public relations perspective. *Public Relations Review*, 32(4), 402-406.
- Trammell, K. D. (2007). Candidate campaign blogs: Directly reaching out to the youth vote. *American Behavioral Scientist*, 50(9), 1255-1263.
- Trammell, K. D., & Keshelashvili, A. (2005). Examining the new influencers: A self-presentation study of A-list blogs. *Journalism & Mass Communication Quarterly*, 82(4), 968-982.
- Trammell, K. D., Williams, A. P., Postelnicu, M., & Landreville K. D. (2006). Evolution of online campaigning: Increasing interactivity in candidate web sites and blogs through text and technical features. *Mass Communication & Society*, 9(1), 21-44.
- TreeHugger. (2008a). About TreeHugger. Retrieved October 7, 2008, from <http://www.treehugger.com/about/>
- TreeHugger. (2008b). Comment Central. Retrieved October 9, 2008, from <http://www.treehugger.com/comments.php>
- TreeHugger. (2008c, October 20). Weekly Archives. Retrieved October 20, 2008, from <http://www.treehugger.com/weekly.php>
- Trufelman, L., & Goldberg, L. (2002). Pitching blogs: Latest type of online media vehicle may provide valuable PR opportunities. *Public Relations Tactics*, 9(8), 6.
- Vergeer, M. & Hermans, L. (2008). Analysing online political discussions: Methodological considerations. *Javnost-The Public*, 15(2), 37-56.
- Wall, M. A. (2007). Social movements and email: Expressions of online identity in the globalization protests. *New Media & Society*, 9(2), 258-277.

- Watzlawick, P., Beavin, J.B., & Jackson, D.D. (1967). *Pragmatics of Human Communication*. New York: W.W. Norton.
- WDW. (2008, June 13). Toyota Yaris wins Environmental Transport Association's Green Car of the Year award. Message posted to <http://www.treehugger.com/files/2008/06/toyota-yaris-wins-green-car-of-the-year-award.php#comment-199246>
- Weaver, D. H. (2007). Thoughts on agenda setting, framing and priming. *Journal of Communication*, 57, 142-147.
- Williams, A. (2008, September 5). 'Green-issue' magazines: Which publications walk the environmentally-responsible walk? *Sustainablog*, from <http://sustainablog.org/2008/09/05/green-issue-magazines-which-publications-walk-the-environmentally-responsible-walk/>
- Williams, A. P. (2004). *Media narcissism and self-reflexive reporting: Metacommunication in televised news broadcasts and web coverage of Operation Iraqi Freedom*. Unpublished Dissertation, University of Florida.
- Williams, A. P. (2006). Net Narcissism: Leading TV news Web sites' self-reflexive coverage during Operation Iraqi Freedom. In R. D. Berenger (Ed.), *Cybermedia Go to War: Role of Non-traditional Media in the 2003 Iraq War and its Aftermath* (pp. 372-382). Spokane, WA: Marquette Books.
- Williams, A. P. (2007). Framing the youth in campaign 2004: Twenty million strong--or weak? *American Behavioral Scientist*, 50(9), 1273-1279.
- Williams, A. P., & Kaid, L. L. (2006). Media framing of the European parliamentary election: A view from the United States. In M. M. J. Tenscher (Ed.), *Campaigning in Europe--*

Campaigning for Europe: Political parties, campaigns mass media, and the European parliamentary elections 2004 (pp. 295-304). Berlin: LIT Publishers.

- Williams, A. P., Kaid, L. L., Landreville, K. D., Fernandes, J., Yun, H. J., Bagley, D., & Urriste, S. (2007). The representation of the European Union elections in news media coverage around the world. In L. L. Kaid (Ed.), *The expansion election: Communication shared sovereignty in the 2004 European parliamentary elections*: Peter Lang.
- Williams, A. P., Martin, J. D., & Trammell, Jr., M. (2004). *Google news, the web sphere, hyperlinking, and gatekeeping: An exploratory analysis of an online news source*. Paper presented at the International Communication Association annual convention 2004.
- Williams, A. P., & Trammell, K. D. (2005). Candidate campaign e-mail messages in the presidential election 2004. *American Behavioral Scientist*, 49(4), 560-574.
- Williams, A. P., Trammell, K. D., Postelnicu, M., Landreville, K. D., & Martin, J. D. (2005). Blogging and hyperlinking: Use of the web to enhance viability during the 2004 US campaigns. *Journalism Studies*, 6(2), 177-186.
- Xenos, M. (2008). New mediated deliberation: Blog and press coverage of the Alito nomination. *Journal of Computer-Mediated Communication*, 13(2), 485-503.
- Yoder, (2008, November 22) Hugg.com [Msg 2]. Message posted to <http://forums.treehugger.com/viewtopic.php?f=2&t=7318&start=0&hilit=hugg>

IX. Appendices

IX.a Tables

Table 1 – Category Frequencies and Percents for TreeHugger.com Blog Posts (N=336) and User-generated Blog Comments (N=1342)

	Posts	Comments	Total	X ²
<i>Business & Politics</i>	73 (21.7%)	282 (21.0%)	355 (21.2%)	8.035
<i>Cars & Transportation**</i>	46 (13.7%)	275 (20.5%)	321 (19.1%)	
<i>Science & Technology</i>	50 (14.9%)	245 (18.3%)	295 (17.6%)	
<i>Design & Architecture</i>	60 (17.9%)	215 (16.0%)	275 (16.4%)	
<i>Interact</i>	21 (6.2%)	97 (7.2%)	118 (7.0%)	6.433
<i>Food & Health</i>	17 (5.1%)	77 (5.7%)	94 (5.6%)	
<i>Culture & Celebrity</i>	22 (6.5%)	56 (4.2%)	78 (4.6%)	
<i>Travel & Nature</i>	9 (2.7%)	46 (3.4%)	55 (3.3%)	
<i>Take Action *</i>	16 (4.8%)	30 (2.2%)	46 (2.7%)	35.09
<i>Treehugger Exclusives ***</i>	15 (4.5%)	6 (0.4%)	21 (1.3%)	
<i>Fashion & Beauty</i>	7 (2.1%)	13 (1.0%)	20 (1.2%)	
Total	336 (100%)	1342 (100%)	1678 (100%)	

Table 2 – Issue Frequencies and Percents for TreeHugger.com Blog Posts (N=336) and User-generated Blog Comments (N=1342)

	Posts	Comments	X ²
Sustainable energy sources *	58 (17.2%)	172 (12.8%)	4.489 (1)
Gadgets & purchasable products	46 (13.6%)	148 (11.0%)	
Science & technology	42 (12.4%)	145 (10.8%)	
Treehugger content *	41 (12.1%)	113 (8.4%)	4.612 (1)
Energy conservation ***	64 (18.9%)	112 (8.3%)	32.781 (1)
Pollution *	38 (11.3%)	106 (7.9%)	3.985 (1)
Architecture & building technology **	45 (13.4%)	105 (7.8%)	10.237 (1)
Business policies & activities (negative)	25 (10.1%)	101 (7.5%)	
Automobiles (neutral)	15 (4.5%)	98 (7.3%)	
Exclusively economic issues	27 (8.0%)	84 (6.2%)	

Recycling/ reuse/ waste reduction ***	51 (15.1%)	81 (6.0%)	30.993 (1)
Food ***	36 (10.7%)	72 (5.4%)	12.768 (1)
Business policies & activities (positive) ***	72 (21.3%)	68 (5.1%)	94.069 (1)
Other transportation (positive)	22 (6.5%)	65 (4.8%)	
Environmental resource conservation ***	42 (12.5%)	64 (4.8%)	27.139 (1)
Automobiles (negative)	11 (3.3%)	58 (4.3%)	
Other government, policy, & political issues *	25 (7.4%)	57 (4.2%)	5.895 (1)
Automobiles (positive)	16 (4.7%)	55 (4.1%)	
Other health topics	21 (6.2%)	54 (4.0%)	
Citizens (negative)	7 (2.1%)	53 (3.9%)	
Nature/ wilderness **	25 (7.4%)	49 (3.6%)	9.153 (1)
Politicians (negative)	5 (1.5%)	39 (2.9%)	
Agriculture	14 (4.1%)	38 (2.8%)	
Art *	19 (5.6%)	38 (2.8%)	6.527 (1)
Citizens (positive) ***	33 (9.8%)	35 (2.6%)	35.961 (1)

Oil/ petroleum industry	9 (2.7%)	35 (2.6%)	
Other energy issues	4 (1.2%)	35 (2.6%)	
Other transportation (neutral)	6 (1.8%)	31 (2.3%)	
Environmental policy & legislation (negative)	14 (4.2%)	31 (2.3%)	
Global warming/ climate change ***	34 (10.1%)	28 (2.1%)	48.726 (1)
Environmental policy & legislation (neutral) **	18 (5.3%)	28 (2.1%)	10.782 (1)
Wildlife conservation **	16 (4.7%)	24 (1.8%)	10.211 (1)
Family	8 (2.4%)	24 (1.8%)	
Other transportation (negative)	1 (0.3%)	22 (1.6%)	
Marketing	7 (2.1%)	21 (1.6%)	
Coal pollution and effects *	11 (3.3%)	19 (1.4%)	5.283 (1)
City planning	8 (2.4%)	19 (1.4%)	
China	6 (1.8%)	18 (1.3%)	
Politicians (positive) *	11 (3.3%)	17 (1.3%)	6.597 (1)
Fashion	9 (2.7%)	17 (1.3%)	

Celebrities (positive) ***	18 (5.3%)	15 (1.1%)	25.05 (1)
Citizens (neutral) *	9 (2.7%)	15 (1.1%)	4.644 (1)
Environmental education ***	18 (5.3%)	14 (1.0%)	26.733 (1)
Other oil issues	6 (1.8%)	14 (1.0%)	
Entertainment media **	10 (3.0%)	13 (1.0%)	8.011 (1)
Animals (general)	4 (1.2%)	13 (1.0%)	
Environmental/ green movement	3 (0.9%)	13 (1.0%)	
Natural disasters	3 (0.9%)	13 (1.0%)	
Celebrities (negative)	0 (0.0%)	12 (0.9%)	
Activism **	10 (3.0%)	12 (0.9%)	9.003 (1)
Scientists & environmental professionals (positive)	19 (5.6%)	11 (0.8%)	35.778 (1)

Nuclear power	2 (0.6%)	11 (0.8%)	
Cities	0 (0.0%)	11 (0.8%)	
Politicians (neutral)	6 (1.8%)	9 (0.7%)	

Medicine	9 (2.7%)	8 (0.6%)	
Environmental policy & legislation (positive) ***	25 (7.4%)	8 (0.6%)	65.293 (1)
Celebrities (neutral)	1 (0.3%)	8 (0.6%)	
Special event ***	10 (3.0%)	7 (0.5%)	16.144 (1)
Scientists & environmental professionals (neutral) **	7 (2.1%)	6 (0.4%)	9.359 (1)
Clean Coal and other new coal technology	4 (1.2%)	5 (0.4%)	
Scientists & environmental professionals (negative)	1 (0.3%)	2 (0.1%)	
Elections	2 (0.6%)	0 (0.0%)	
Other issues	140 (41.4%)	416 (30.9%)	
* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$			

Table 3.1 – Valence Frequencies and Percents for TreeHugger.com Blog Posts (N=337) and User-generated Blog Comments (N=1344)

	Positive	Negative	Neutral	Total
Post	197 (58.5%)	56 (16.6%)	84 (24.9%)	337 (100%)
Comment	522 (38.8%)	473 (35.2)	349 (26.0%)	1344 (100%)
Total	719 (42.8%)	529 (31.5%)	433 (25.8%)	

$X^2 = 53.902, p \leq .001$

Table 3.2 – Valence Frequencies and Percents for TreeHugger.com User-generated Blog Comments (N=1344) for each Blog Post Valence

Post Valence	Comment valence			
	Positive	Negative	Neutral	Total
Positive	327 (49.4%)	149 (22.5%)	186 (28.1%)	662 (100.0%)
Negative	70 (21.3%)	98 (29.8%)	161 (48.9%)	329 (100.0%)
Neutral	125 (35.4%)	102 (28.9%)	126 (35.7%)	353 (100.0%)
Total	522 (38.8%)	349 (26.0%)	473 (35.2%)	1344 (100.0%)

$X^2 (4) = 79.411, p \leq .001$

Table 4 – Valence Frequencies and Percents for TreeHugger.com Blog Posts and User-generated Blog Comments in each TreeHugger Category

	Posts				Comments ($X^2 = 34.529^a, p \leq .05$)			
	Positive	Negative	Neutral		Positive	Negative	Neutral	
<i>Business & Politics</i>	35 (47.9%)	20 (27.4%)	18 (24.7%)	+	106 (37.7%)	106 (37.7%)	69 (24.6%)	=
<i>Cats & Transportation</i>	24 (52.2%)	8 (17.4%)	14 (30.4%)	+	88 (32.4%)	107 (39.3%)	77 (28.3%)	-
<i>Culture & Celebrity</i>	20 (90.9%)	1 (4.5%)	1 (4.5%)	+	23 (41.1%)	21 (37.5%)	12 (21.4%)	+
<i>Design & Architecture</i>	46 (76.7%)	6 (10.0%)	8 (13.3%)	+	91 (42.3%)	78 (36.3%)	46 (21.4%)	+
<i>Fashion & Beauty</i>	7 (100.0%)	0 (0.0%)	0 (0.0%)	+	8 (61.5%)	5 (38.5%)	0 (0.0%)	+
<i>Food & Health</i>	9 (52.9%)	6 (35.3%)	2 (11.8%)	+	37 (48.1%)	21 (27.3%)	19 (24.7%)	+
<i>Interact</i>	5 (23.8%)	1 (4.8%)	15 (71.4%)	=	33 (34.0%)	28 (28.9%)	36 (37.1%)	+
<i>Science & Technology</i>	22 (44.9%)	10 (20.4%)	17 (34.7%)	+	89 (36.3%)	84 (34.3%)	72 (29.4%)	+

<i>Take Action</i>	13 (81.2%)	0 (0.0%)	3 (18.8%)	+	19 (63.3%)	5 (16.7%)	6 (20.0%)	+
<i>Travel & Nature</i>	4 (44.4%)	3 (33.3%)	2 (22.2%)	+	21 (45.7%)	16 (34.8%)	9 (19.6%)	+
<i>Treehugger Exclusives</i>	11 (73.3%)	0 (0.0%)	4 (26.7%)	+	3 (50.0%)	2 (33.3%)	1 (16.7%)	+
Total	196 (58.5%)	55 (16.4%)	84 (25.1%)	+	518 (38.7%)	473 (35.4%)	347 (25.9%)	+

Table 5 – Valence Frequencies and Percents for TreeHugger.com Blog Posts and User-generated Blog Comments for each Issue Discussed

	Posts				Comments			
	Positive	Negative	Neutral		Positive	Negative	Neutral	
Architecture & building technology	38 (84.4%)	3 (6.7%)	4 (8.9%)	***	55 (52.4%)	26 (24.8%)	24 (22.9%)	**
Gadgets & purchasable products	37 (80.4%)	2 (4.3%)	7 (15.2%)	**	67 (45.3%)	45 (30.4%)	36 (24.3%)	
Automobiles (positive)	13 (81.2%)	0 (0.0%)	3 (18.8%)		38 (69.1%)	11 (20.0%)	6 (10.9%)	***
Automobiles (negative)	2 (18.2%)	7 (63.6%)	2 (18.2%)		9 (15.5%)	42 (72.4%)	7 (12.1%)	***
Automobiles (neutral)	5 (33.3%)	0 (0.0%)	10 (66.7%)		15 (15.3%)	27 (27.6%)	56 (57.1%)	***
Other transportation (positive)	17 (77.3%)	3 (13.6 %)	2 (9.1%)		40 (62.5%)	17 (26.6%)	7 (10.9%)	***
Other transportation (negative)	0 (0.0%)	0 (0.0%)	1 (100.0%)		1 (4.5%)	18 (81.8%)	3 (13.6%)	***

Other transportation (neutral)	2 (33.3%)	2 (33.3%)	2 (33.3%)		8 (25.8%)	11 (35.5%)	12 (38.7%)	
Science & technology	22 (53.7%)	6 (14.6%)	13 (31.7%)		52 (35.9%)	45 (31.0%)	48 (33.1%)	
Environmental education	17 (94.4%)	1 (5.6%)	0 (0.0%)		13 (92.9%)	0 (0.0%)	1 (7.1%)	
Recycling/ reuse/ waste reduction	44 (86.3%)	1 (2.0%)	6 (11.8%)	***	43 (53.1%)	18 (22.2%)	20 (24.7%)	*
Global warming/ climate change	10 (29.4%)	9 (26.5%)	15 (44.1%)	***	3 (10.7%)	16 (57.1%)	9 (32.1%)	**
Pollution	19 (50.0%)	10 (26.3%)	9 (23.7%)		23 (21.7%)	56 (52.8%)	27 (25.5%)	***
Medicine	1 (33.3%)	2 (66.7%)	0 (0.0%)		3 (37.5%)	3 (37.5%)	2 (25.0%)	
Other health topics	8 (38.1%)	9 (42.9%)	4 (19.0%)		15 (27.8%)	25 (46.3%)	14 (25.9%)	
Business policies & activities (positive)	55 (76.4%)	0 (0.0%)	17 (23.6%)	***	46 (67.6%)	11 (16.2%)	11 (16.2%)	***
Business policies & activities (negative)	6 (17.6%)	18 (52.9%)	10 (29.4%)	***	11 (10.9%)	76 (75.2%)	14 (13.9%)	***
Exclusively economic issues	8 (29.6%)	9 (33.3%)	10 (37.0%)		23 (27.4%)	35 (41.7%)	26 (31.0%)	
Elections	0 (0.0%)	1 (50.0%)	1 (50.0%)		1 (12.5%)	7 (87.5%)	0 (0.0%)	

Environmental policy & legislation (positive)	16 (64%)	2 (8.0%)	7 (28.0%)	17 (70.8%)	4 (16.7%)	3 (12.5%)	**
Environmental policy & legislation (negative)	1 (7.1%)	1 (7.1%)	12 (85.7%)	3 (10.0%)	23 (76.7%)	4 (13.3%)	***
Environmental policy & legislation (neutral)	8 (44.4%)	5 (27.8%)	5 (27.8%)	4 (14.3%)	9 (32.1%)	15 (53.6%)	**
Other government, policy, & political issues	10 (40.0%)	5 (20.0%)	10 (40.0%)	19 (33.3%)	22 (38.6%)	16 (28.1%)	
Politicians (positive)	9 (81.8%)	1 (9.1%)	1 (9.1%)	10 (62.5%)	5 (31.2%)	1 (6.2%)	
Politicians (negative)	0 (0.0%)	4 (80.0%)	1 (20.0%)	3 (7.9%)	30 (78.9%)	5 (13.2%)	***
Politicians (neutral)	2 (33.3%)	3 (50.0%)	1 (16.7%)	1 (11.1%)	5 (55.6%)	3 (33.3%)	
Celebrities (positive)	16 (88.9%)	1 (5.6%)	1 (5.6%)	10 (66.7%)	4 (26.7%)	1 (6.7%)	
Celebrities (negative)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (25.0%)	8 (66.7%)	1 (8.3%)	
Celebrities (neutral)	0 (0.0%)	0 (0.0%)	1 (100.0%)	4 (50.0%)	2 (25.0%)	2 (25.0%)	
Scientists & environmental professionals	12 (63.2%)	2 (10.5%)	5 (26.3%)	8 (72.7%)	0 (0.0%)	3 (27.3%)	

(positive)							
Scientists & environmental professionals (negative)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	
Scientists & environmental professionals (neutral)	0 (0.0%)	2 (28.6%)	5 (71.4%)	0 (0.0%)	4 (66.7%)	2 (33.3%)	
Citizens (positive)	27 (81.8%)	2 (6.1%)	4 (12.1%) *	29 (82.9%)	4 (11.4%)	2 (5.7%)	***
Citizens (negative)	2 (28.6%)	4 (57.1%)	1 (14.3%)	11 (21.2%)	34 (65.4%)	7 (13.5%)	***
Citizens (neutral)	2 (22.2%)	4 (44.4%)	3 (33.3%)	6 (40.0%)	4 (26.7%)	5 (33.3%)	
Clean Coal and other new coal technology	2 (50.0%)	1 (25.0%)	1 (25.0%)	2 (40.0%)	2 (40.0%)	1 (20.0%)	
Coal pollution and effects	0 (0.0%)	5 (45.5%)	6 (54.5%)	5 (26.3%)	12 (63.2%)	2 (10.5%)	
Oil/ petroleum industry	3 (33.3%)	3 (33.3%)	3 (33.3%)	6 (17.1%)	19 (54.3%)	10 (28.6%)	*
Other oil issues	4 (66.7%)	0 (0.0%)	2 (33.3%)	3 (21.4%)	4 (28.6%)	7 (50.0%)	
Sustainable energy sources	35 (61.4%)	7 (12.3%)	15 (26.3%)	69 (40.1%)	52 (30.2%)	51 (29.7%)	

Energy conservation	46 (71.9%)	5 (7.8%)	13 (20.3%) *	49 (43.8%)	39 (34.8%)	24 (21.4%)	
Other energy issues	1 (25.0%)	2 (50.0%)	1 (25.0%)	8 (22.9%)	15 (42.9%)	12 (34.3%)	
Environmental resource conservation	26 (61.9%)	8 (19.0%)	8 (19.0%)	30 (46.9%)	19 (29.7%)	15 (23.4%)	
Nature/ wilderness	15 (60.0%)	4 (16.0%)	6 (24.0%)	19 (38.8%)	18 (36.7%)	12 (24.5%)	
Wildlife conservation	5 (31.2%)	7 (43.8%)	4 (25.0%)	5 (20.8%)	12 (50.0%)	7 (29.2%)	
Food	21 (58.3%)	7 (19.4%)	8 (22.2%)	31 (43.1%)	23 (31.9%)	18 (25.0%)	
Treehugger content	22 (53.7%)	7 (17.1%)	12 (29.3%)	38 (33.6%)	51 (45.1%)	24 (21.2%)	
Family	8 (100.0%)	0 (0.0%)	0 (0.0%)	14 (58.3%)	3 (12.5%)	7 (29.2%)	*
City planning	5 (62.5%)	1 (12.5%)	2 (25.0%)	6 (31.6%)	7 (36.8%)	6 (31.6%)	
Agriculture	5 (35.7%)	4 (28.6%)	5 (35.7%)	17 (44.7%)	9 (23.7%)	12 (31.6%)	
Nuclear power	0 (0.0%)	2 (100.0%)	0 (0.0%)	3 (27.3%)	6 (54.5%)	2 (18.2%)	
Entertainment media	10 (100.0%)	0 (0.0%)	0 (0.0%)	3 (23.1%)	7 (53.8%)	3 (23.1%)	

Art	15 (78.9%)	1 (5.3%)	3 (15.8%)	23 (60.5%)	5 (13.2%)	10 (26.3%)	**
Animals (general)	3 (75.0%)	0 (0.0%)	1 (25.0%)	5 (38.5%)	3 (23.1%)	5 (38.5%)	
Environmental/ green movement	3 (100.0%)	0 (0.0%)	0 (0.0%)	7 (53.8%)	2 (15.4%)	4 (30.8%)	
Natural disasters	1 (33.3%)	1 (33.3%)	1 (33.3%)	5 (38.5%)	8 (61.5%)	0 (0.0%)	
Marketing	5 (71.4%)	0 (0.0%)	2 (28.6%)	8 (38.1%)	9 (42.9%)	4 (19.0%)	
China	0 (0.0%)	5 (83.3%)	1 (16.7 %)	4 (22.2%)	10 (55.6%)	4 (22.2%)	
Fashion	6 (66.7%)	0 (0.0%)	3 (33.3%)	10 (58.8%)	6 (35.3%)	1 (5.9%)	
Activism	4 (40.0%)	3 (30.0%)	3 (30.0%)	5 (41.7%)	5 (41.7%)	2 (16.7%)	
Special event	7 (77.8%)	0 (0.0%)	2 (22.2%)	3 (42.9%)	2 (28.6%)	2 (28.6%)	
Cities	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (36.4%)	7 (63.6%)	0 (0.0%)	
Other issues	88 (63.3%)	19 (13.7%)	32 (23.0%)	174 (41.8%)	156 (37.5%)	86 (20.7%)	*
* $p \leq .05$	** $p \leq .01$	*** $p \leq .001$					

**Table 6.1 – Frequencies and Percents of technical interactivity in
TreeHugger.com Blog Posts (N=337) and User-generated Comments (N=1344)**

	Posts	Comments ***	Overall
Present ***	332 (98.5%)	30 (2.2%)	362 (21.5%)
Absent	5 (1.5%)	1314 (97.8%)	726 (43.2%)
* $p \leq .05$	** $p \leq .01$	*** $p \leq .001$	

**Table 6.2 – Textual interactivity Frequencies and Percents for
TreeHugger.com Blog Posts (N=336) and User-generated Blog Comments
(N=1345)**

	Posts	Comments	Overall
Present ***	146 (43.5%)	580 (43.1%)	726 (43.2%)
Absent	190 (56.5%)	765 (56.9%)	955 (56.8%)
* $p \leq .05$	** $p \leq .01$	*** $p \leq .001$	

Table 6.3 – Textual Interactivity Frequencies and Percents for User-generated comments on TreeHugger.com Blog Posts featuring textual interactivity

	Contains textual interactivity	Does not contain textual interactivity	
# of comments	253 (47.5%)	280 (52.5%)	533 (100.0%)

Table 7.1 – Frequencies and Percentages of Individual Types of Interactivity in both TreeHugger.com Blog Posts and User-generated Blog Comments

(N=1456)

Types of Interactivity	Instances of interactivity type
Direct address/ inclusive language	596 (40.9%)
Hyperlink	358 (24.6%)
Interactive metacommunication	168 (11.5%)
Direct appeal	140 (9.6%)
Photo gallery	81 (5.6%)
Video	40 (2.7%)
Asking a question	39 (2.7%)
Static downloadable content	15 (1.0%)
Poll/ survey	10 (0.7%)
Game/ quiz	3 (0.2%)
Audio	3 (0.2%)
Other technical interactivity	2 (0.1%)
Banner link	1 (0.1%)
Interactive graph	0 (0.0%)
Personalized downloadable content	0 (0.0%)
Photo slideshow	0 (0.0%)
Search function	0 (0.0%)

Email address/ contact page	0 (0.0%)
“Forward to a friend” link	0 (0.0%)
Total	1456 (100.0%)

Table 7.2 – Technical Interactivity Type Frequencies and Percentages in TreeHugger.com Blog Posts and User-Generated Comments

	Posts	Comments
Audio	3 (.09%)	0 (0.0%)
Banner link	1 (0.3%)	0 (0.0%)
Static downloadable content	13 (3.9%)	2 (0.1%)
Game/ quiz	3 (0.9%)	0 (0.0%)
Interactive graph	0 (0.0%)	0 (0.0%)
Hyperlink	330 (98.8%)	28 (2.1%)
Personalized downloadable content	0 (0.0%)	0 (0.0%)
Photo gallery	81 (24.3%)	0 (0.0%)
Photo slideshow	0 (0.0%)	0 (0.0%)
Poll/ survey	10 (3.0%)	0 (0.0%)
Search function	0 (0.0%)	0 (0.0%)
Video	40 (12.0%)	0 (0.0%)
Other technical interactivity	2 (0.6%)	0 (0.0%)

Table 7.3 - Textual Interactivity Type Frequencies and Percentages for TreeHugger.com Blog Posts and User-generated Comments

	Posts	Comments
Direct appeal	36 (10.7%)	104 (7.7%)
Direct address/ inclusive language	124 (36.7%)	472 (35.0%)
Email address/ contact page	0 (0.0%)	0 (0.0%)
“Forward to a friend” link	0 (0.0%)	0 (0.0%)
Interactive metacommunication	1 (0.3%)	167 (12.4%)
Asking a question	8 (2.4%)	31 (2.3%)

Table 7.4 – Average Number of Comments on Blog Posts that used Each Interactive Element

	Number of posts	Number of comments	Mean comments per post
All posts	338	1,696	5.017
Survey	10	106	10.6
Asking a question	8	53	6.625
Photo gallery	81	519	6.407
Direct appeal	36	189	5.25
Video	40	203	5.075
Direct address	124	567	4.572
Static downloadable content	13	53	4.077

**Table 8 – Interactive Metacommunication Type Frequencies and Percentages
for TreeHugger.com Blog Posts and User-generated Comments**

	Posts	Comments [$\chi^2(8) = 161.012, p \leq .001$]
Debate	0 (0.0%)	58 (35.4%)
Reinforcement	0 (0.0%)	37 (22.4%)
Criticism	0 (0.0%)	36 (22.0%)
Compliment	0 (0.0%)	16 (9.8%)
Request for information	1 (100.0%)	11 (6.7%)
Other	0 (0.0%)	10 (6.1%)
Correction	0 (0.0%)	7 (4.3%)
Answering question	0 (0.0%)	5 (3.0%)
Other query	0 (0.0%)	3 (1.8%)
Total	1 (100.0%)	164 (100.0%)

**Table 9– Metacommunication Frame and Metacommunication Frame Focus
Frequencies and Percentages in TreeHugger.com Blog Posts and User-
generated Comments**

	Present [$X^2(1) = 303.209, p \leq .001$]	Absent
Posts [$X^2(1) = 24.592, p \leq .001$]		
Metacommunication frame	326 (97.6%)	8 (2.4%)
Internal focus/ self-reflexive	298 (91.1%)	29 (8.9%)
External focus/ strategy process	252 (77.1%)	75 (22.9%)
Comments [$X^2(1) = 121.128, p \leq .001$]		
Metacommunication frame	605 (44.9%)	742 (55.1%)
Internal focus/ self-reflexive	418 (31.0%)	200 (14.8%)
External focus/ strategy process	227 (16.8%)	388 (28.8%)

Table 10 – Specific Internal Metacommunication Frame Frequencies and Percentages for TreeHugger.com Blog Posts

TreeHugger post	Other TreeHugger produced material	User generated content	Total
392 (86.5%)	36 (8.0%)	25 (5.5%)	453 (100%)

$[X^2 (2) = 866.046, p \leq .001]$

Table 11 – Specific External Metacommunication Frame Frequencies and Percentages for TreeHugger.com Blog Posts and User-generated Comments

	Post	Comments	X^2
Another blog *	49 (19.0%)	28 (12.2 %)	4.171
Commercial company **	29 (11.2%)	50 (21.8%)	10.018
Mainstream media ***	109 (42.2%)	45 (19.7%)	28.651
Non-governmental organization	16 (6.2%)	18 (7.9%)	
Non-political individual/ persons **	5 (1.9%)	17 (7.4%)	8.464
Political organization/ figure	10 (3.9%)	14 (6.1%)	
Academic journal	7 (2.1%)	6 (2.6%)	
Ambiguous	0 (0.0%)	3 (1.3%)	
Book	2 (0.8%)	11 (4.8%)	
Entertainment media	1 (0.4 %)	8 (3.5%)	
Environmental movement	0 (0.0%)	1 (0.4%)	
Film	4 (1.6%)	6 (2.6%)	
General information site	0 (0.0%)	9 (3.9%)	
Online news	20 (7.8%)	2 (0.9%)	
Online video	2 (0.8%)	1 (0.4%)	
Wikipedia	4 (1.6%)	4 (1.7%)	
YouTube	0 (0.0%)	6 (2.6%)	
Total	258 (100%)	229 (100%)	

IX.b Codesheet

- Coder
 - Alex
 - Evan
- Post number: _____
- Comment number: _____
- Post Date (mm/dd): _____
- Post title: _____
- Name of post author: _____
- Is the item being coded a post or comment?
 - Post
 - Comment
- If coding a comment, is the commenter readily identified as TreeHugger staff? (do not look beyond the comments)
 - Yes No
- Please provide descriptions of examples of comments by TreeHugger staff and copy/paste direct quotes in the space provided below: _____
- If coding a post, how many comments are on the post within a week of posting: _____
- Please indicate which category the post is identified as by Treehugger from the choices below:

- Business & Politics
- Cars & Transportation
- Culture & Celebrity
- Design & Architecture
- Fashion & Beauty
- Food & Health
- Interact
- Science & Technology
- Travel & Nature
- TreeHugger Exclusives
- Other: _____

Please select all issues below that are discussed in the article or comment being coded.

- Is discussion of Architecture & building technology present?
 - Yes No
- Is discussion of Architecture & building technology present?
 - Yes No
- Is discussion of Gadgets/purchasable products present?
 - Yes No
- Is discussion of Automobiles (positive) present?
 - Yes No
- Is discussion of Automobiles (negative) present?
 - Yes No

- Is discussion of Automobiles (neutral) present?
 - Yes No
- Is discussion of Other transportation (positive) present?
 - Yes No
- Is discussion of Other transportation (negative) present?
 - Yes No
- Is discussion of Other transportation (neutral) present?
 - Yes No
- Is discussion of Science/Technology (not gadgets/products/specifically transportation) present?
 - Yes No
- Is discussion of Environmental education present?
 - Yes No
- Is discussion of Recycling/reuse/waste reduction programs present?
 - Yes No
- Is discussion of Global warming/climate change present?
 - Yes No
- Is discussion of Pollution present?
 - Yes No
- Is discussion of Medicine present?
 - Yes No
- Is discussion of Other health topics present?
 - Yes No

- Is discussion of Business policies and activities (positive) present?
 - Yes No
- Is discussion of Business policies and activities (negative) present?
 - Yes No
- Is discussion of Exclusively economic issues present?
 - Yes No
- Is discussion of Elections present?
 - Yes No
- Is discussion of Environmental policy & legislation (positive) present?
 - Yes No
- Is discussion of Environmental policy & legislation (negative) present?
 - Yes No
- Is discussion of Environmental policy & legislation (neutral) present?
 - Yes No
- Is discussion of Other government, policy, and political issues present?
 - Yes No
- Is discussion of Politicians (positive) present?
 - Yes No
- Is discussion of Politicians (negative) present?
 - Yes No
- Is discussion of Politicians (neutral) present?
 - Yes No
- Is discussion of Celebrities (positive) present?

- Yes No
- Is discussion of Celebrities (negative) present?
 - Yes No
- Is discussion of Celebrities (neutral) present?
 - Yes No
- Is discussion of Scientists and environmental professionals (positive) present?
 - Yes No
- Is discussion of Scientists and environmental professionals (negative) present?
 - Yes No
- Is discussion of Scientists and environmental professionals (neutral) present?
 - Yes No
- Is discussion of Citizens (positive) present?
 - Yes No
- Is discussion of Citizens (negative) present?
 - Yes No
- Is discussion of Citizens (neutral) present?
 - Yes No
- Is discussion of Clean coal and other new coal technology present?
 - Yes No
- Is discussion of Coal pollution and effects present?

- Yes No
- Is discussion of Oil/petroleum industry present?
 - Yes No
- Is discussion of Other oil issues present?
 - Yes No
- Is discussion of Sustainable energy sources (ethanol, solar, wind, etc) present?
 - Yes No
- Is discussion of Energy conservation present?
 - Yes No
- Is discussion of Other energy issues present?
 - Yes No
- Is discussion of Environmental resource conservation present?
 - Yes No
- Is discussion of Nature/wilderness present?
 - Yes No
- Is discussion of Wildlife conservation present?
 - Yes No
- Is discussion of Other issues present?
 - Yes No
- If Other issues are present, describe that below. _____
- Please describe any notable topics discussed in an article or comments.
Include copied sections of text if helpful. _____

- Source of the story
 - Mainstream media
 - Blog
 - TreeHugger users
 - Commercial company
 - Non-governmental organization
 - Other: _____
- Please note any notable sources for the article. Cut and paste passages if appropriate. _____
- If you are coding a post, what is the overall tone of the post?
 - Positive
 - Negative
 - Neutral
- Please describe any notable or unusual examples of discussion tone. Copy and paste sections if appropriate.: _____

METACOMMUNICATION

- Indicate below whether the metacommunication frame is present or absent.:
 - Present
 - Absent
- If present, is Internally focused/self-reflexive metacommunication frames present?
 - Yes No
- If present, is Externally focused metacommunication frames present?

- Yes No
- If the metacommunication frame is internal/self-reflexive in a post, what is the focus? (check all that apply) ****FIRST INSTANCE****
 - TreeHugger post
 - Other TreeHugger-produced material
 - User-generated content (i.e., comments & forums)
- If you are coding a self-reflexive metacommunication frame in a post, how is it valenced? ****FIRST INSTANCE****
 - Positive
 - Negative
 - Neutral
- If the metacommunication frame is internal/self-reflexive in a post, what is the focus? (check all that apply) ****SECOND INSTANCE****
 - TreeHugger post
 - Other TreeHugger-produced material
 - User-generated content (i.e., comments & forums)
- If you are coding a self-reflexive metacommunication frame in a post, how is it valenced? ****SECOND INSTANCE****
 - Positive
 - Negative
 - Neutral
- If the metacommunication frame is internal/self-reflexive in a post, what is the focus? (check all that apply) ****THIRD INSTANCE****

- TreeHugger post
- Other TreeHugger-produced material
- User-generated content (i.e., comments & forums)
- If you are coding a self-reflexive metacommunication frame in a post, how is it valenced? ****THIRD INSTANCE****
 - Positive
 - Negative
 - Neutral
- If the metacommunication frame is internal/self-reflexive in a post, what is the focus? (check all that apply) ****FOURTH INSTANCE****
 - TreeHugger post
 - Other TreeHugger-produced material
 - User-generated content (i.e., comments & forums)
- If you are coding a self-reflexive metacommunication frame in a post, how is it valenced? ****FOURTH INSTANCE****
 - Positive
 - Negative
 - Neutral
- Please describe any notable examples of self-reflexive metacommunication frames in an article. Copy and paste text if appropriate. _____
- If you are coding a self-reflexive comment, how is it valenced? ****FIRST INSTANCE****
 - Affirmative

- Challenging
 - General discussion
- If you are coding a self-reflexive comment, how is it valenced? ****SECOND INSTANCE****
 - Affirmative
 - Challenging
 - General discussion
- If you are coding a self-reflexive comment, how is it valenced? ****THIRD INSTANCE****
 - Affirmative
 - Challenging
 - General discussion
- If you are coding a self-reflexive comment, how is it valenced? ****FOURTH INSTANCE****
 - Affirmative
 - Challenging
 - General discussion
- Please describe any notable examples of self-reflexive metacommunication frames in a comment. Copy and paste text if appropriate. _____
- If the metacommunication frame is externally focused, what is the focus?
****FIRST INSTANCE****
 - Blog
 - Commercial company

- Mainstream Media
 - Non-governmental organization
 - Non-political individual
 - Political organization/figure
 - Other: _____
- If the focus of the metacommunication frame is external, how is it valenced?

****FIRST INSTANCE****

- Positive
 - Negative
 - Neutral
- If the metacommunication frame is externally focused, what is the focus?

****SECOND INSTANCE****

- Blog
 - Commercial company
 - Mainstream Media
 - Non-governmental organization
 - Non-political individual
 - Political organization/figure
 - Other: _____
- If the focus of the metacommunication frame is external, how is it valenced?

****SECOND INSTANCE****

- Positive
- Negative

- Neutral
 - If the metacommunication frame is externally focused, what is the focus?
- **THIRD INSTANCE****
- Blog
 - Commercial company
 - Mainstream Media
 - Non-governmental organization
 - Non-political individual
 - Political organization/figure
 - Other: _____
- If the focus of the metacommunication frame is external, how is it valenced?

- **THIRD INSTANCE****
- Positive
 - Negative
 - Neutral
- If the metacommunication frame is externally focused, what is the focus?

- **FOURTH INSTANCE****
- Blog
 - Commercial company
 - Mainstream Media
 - Non-governmental organization
 - Non-political individual
 - Political organization/figure

- Other: _____F
- If the focus of the metacommunication frame is external, how is it valenced?
- **FOURTH INSTANCE**
 - Positive
 - Negative
 - Neutral
- Please describe any notable examples of externally focused metacommunication frames. Copy and paste text if appropriate.

- Number of hyperlinks within the post (only if coding a post): _____
- Is there a hyperlink to Another blog within the post?
 - Yes No
- Is there a hyperlink to Email address/Contact page within the post?
 - Yes No
- Is there a hyperlink to Mainstream media within the post?
 - Yes No
- Is there a hyperlink to Non-governmental organization within the post?
 - Yes No
- Is there a hyperlink to Other Treehugger-produced material within the post?
 - Yes No
- Is there a hyperlink to Treehugger post/content within the post?
 - Yes No
- Is there a hyperlink to Other content within the post?

- Yes No
- If there is a hyperlink to other content, describe the destination below.

- Please provide the URL for each hyperlink that is within the article:

INTERACTIVITY

- Is there Textual interactivity present?
 - Yes No
- Is there Technical interactivity present?
 - Yes No

Mark below if each of these Technical interactivity features are present

- Is there Audio present?
 - Yes No
- Is there Banner/image link present?
 - Yes No
- Is there Direct link to static downloadable material present?
 - Yes No
- Is there Games/quizzes present?
 - Yes No
- Is there Interactive graphs present?
 - Yes No
- Is there Hyperlinks present?
 - Yes No

- Is there Personalized downloadable material present?
 - Yes No
- Is there Photo gallery present?
 - Yes No
- Is there Photo slide show present?
 - Yes No
- Is there Polls/surveys present?
 - Yes No
- Is there Search function present?
 - Yes No
- Is there Video present?
 - Yes No
- Is there Other technical interactivity present?
 - Yes No
- If there is Other technical interactivity present, please describe below.

- Please describe any notable examples of technical interactivity in an article.
Cut and paste text if appropriate. _____

Mark whether the following Textual interactivity features are present.

- Are there Call to action/direct appeals present?
 - Yes No
- Are there Direct address/inclusive language present?
 - Yes No

- Is there a Email/contact page link present?
 - Yes No
- Is there a "Forward to a friend" link present?
 - Yes No
- Is there Interactive Metacommunication present?
 - Yes No
- Is there Other textual interactivity present?
 - Yes No
- If there is Other textual interactivity present, please describe it below.

If metacommunication is present as textual interactivity, is it used as:

- Reinforcement
 - Yes No
- Compliment
 - Yes No
- Debate
 - Yes No
- Criticism
 - Yes No
- Request for information
 - Yes No
- Other query
 - Yes No

- Other
 - Yes No
- If you selected "yes" for Other, describe below. _____
- Please provide examples of metacommunication as textual interactivity.
Copy/paste examples: _____
- Please provide examples of textual interactivity in general with copied text if possible. _____

IX.c Codebook

Coder: Select your name from the choices available.

Post number: Each archived blog post has a unique number at the beginning of the filename identifying it. Enter that here.

Comment number: Enter the number (xx) that the comment you are coding is in the list of comments. If you are coding a post, enter 00 (two zeros).

Post date: Enter the date of the post as mm/dd/yyyy. For example, the first day coded, January 1, 2008 would be entered as 01/01/2008.

Post title: Insert the title of the post being coded or the title of the post to which the comments is responding. Titles are unique to each item & typically only appear on posts. Titles act like headlines (Trammell, 2004).

Name of post author: Name of the person credited as having written the post. If no one is credited, write "Unidentified."

Post or comment: Select post or comment as the unit of analysis type for the item. Post is the content written by the blog author as the main text of the page. Comment refers to the reader messages left in response to the post (not, the blog author can respond in comments too) (Trammell, 2004).

Comment by Treehugger staff: Employees of the blog occasionally participate in the comment section. If a commenter identifies his or herself as a staff member or someone else does, select "yes."

Number of commenters on post: Enter the total number of comments on the post being coded. There should be an identified comment number, however only comments within seven days of the post's original publishing date should be counted.

Post category as defined by Treehugger: Above the post text on each archived page is a banner designating the site category the post belongs to. Select the matching option from those given. If the post is not of the main categories, choose “Other” and fill in the name in the banner above the post. If the post has no category header above, write “None.”

Issues covered: Select each of the following subjects that is discussed in the blog post or comment being coded. For example, a post is about a new coal emissions scrubber developed by researchers at MIT that is supported by the West Virginia governor, but makes no mention of how coal affects neither wildlife nor the specific scientist working on the project. You would select “Clean coal and other new coal technology,” “Coal pollution,” and “Politicians (favorable)” (assumedly). You would NOT select “Scientists and environmental professionals” or “wildlife conservation” because they were not explicitly discussed. “Science/technology” would not be selected either since there is a more specific option covering that topic.

Architecture & building technology: Discussion of how houses, commercial buildings, office buildings, schools, or other architectural structures deal with or affect environmental issues.

Gadgets/purchasable products: Discussion of products or services relevant to environmental issues. This includes recommendation as well as condemnation of a product or service, as well as neutral discussion.

Automobiles (positive): Discussion of cars, specifically car technology, or the use of cars in a positive tone. Discussion of technology that can be used in automobiles but that is not specifically stated such (e.g., ion batteries for “vehicles”) IS NOT included in this issue.

Automobiles (negative): Discussion of cars, specifically car technology, or the use of cars in a negative tone. Discussion of technology that can be used in automobiles but that is not specifically stated such (e.g., ion batteries for “vehicles”) IS NOT included in this issue.

Other transportation (positive): Discussion of planes, trains, bicycles, subway systems, or other transportation and transportation technology in a positive tone. Discussion of technology that can be used in automobiles but that is not specifically stated such (e.g., ion batteries for “vehicles”) IS NOT included in this issue.

Other transportation (negative): Discussion of planes, trains, bicycles, subway systems, or other transportation and transportation technology in a negative tone. Discussion of technology that can be used in automobiles but that is not specifically stated such (e.g., ion batteries for “vehicles”) IS NOT included in this issue.

Science/Technology (not gadgets/products): Discussion of scientific research or products that are not covered by more specific options (e.g., Clean coal technology). This would include subjects such as the Large Hadron Collider, microbes that eat pollutants, or planetary effects on nature. Discussion of technology that can be used in automobiles but that is not specifically stated such (e.g., ion batteries for “vehicles”) IS included in this issue.

Environmental education: Discussion of efforts to educate people on environmental issues.

Recycling/reuse/waste reduction programs: Discussion of recycling programs, efforts to reuse material resources (e.g., cork boards made from old wine corks), and other efforts to minimize refuse.

Global warming/climate change: Discussion of global warming, global warming debates, and the effects/causes of global warming. Global warming can also be referred to as climate change.

Pollution: Discussion of pollution that is the result of human actions and that is not included under the other more specific issues (i.e., Coal pollution). Examples include industrial emissions, chemical byproducts, and home produced refuse.

Medicine: Discussion of medicine and medical research.

Other health topics: Discussion of health topics such as health effects from pollution, epidemics, health insurance, and others not specifically related to medicine.

Business policies and activities (negative): Discussion of commercial businesses' policies and actions that negatively affect the environment or could potentially do so.

Business policies and activities (positive): Discussion of commercial businesses' policies and actions that potentially positively affect the environment or that could potentially do so.

Exclusively economic issues: Discussion of financial consequences of an issue, causes or results of the nation's financial state, or other specifically financial topics.

Elections: Discussion of the 2008 or past elections.

Environmental policy & legislation (positive): Discussion of positive national or international governmental policy dealing with the environment (i.e., Kyoto protocol, Clean Water Act).

Environmental policy & legislation (negative): Discussion of negative national or international governmental policy dealing with the environment (e.g., deregulation of polluting industries).

Other government, policy, and political issues: Discussion of other political topics and government policy (e.g., policy affecting bicyclists, ethics investigations).

Politicians (positive): Discussion of elected officials and other political figures in a positive manner.

Politicians (negative): Discussion of elected officials and other political figures in a negative manner.

Politicians (Neutral): Discussion of elected officials and other political figures in a negative manner.

Celebrities (positive): Positive discussion of famous individuals not directly involved with science, the environment, or government, including actors, singers, authors, and other famous people.

Celebrities (negative): Negative discussion of famous individuals not directly involved with science, the environment, or government, including actors, singers, authors, and other famous people.

Celebrities (neutral): Neutral discussion of famous individuals not directly involved with science, the environment, or government, including actors, singers, authors, and other famous people.

Scientists and environmental professionals (positive): Positive discussion of non-political individuals/persons who work directly on scientific issues or environmental issues (e.g., primatologists, Sierra Club staff).

Scientists and environmental professionals (negative): Negative discussion of non-political individuals/persons who work directly on scientific issues or environmental issues (e.g., primatologists, Sierra Club staff).

Scientists and environmental professionals (neutral): Neutral discussion of non-political individuals/persons who work directly on scientific issues or environmental issues (e.g., primatologists, Sierra Club staff).

Citizens (positive): Positive discussion of everyday individuals/people (e.g., No-Waste Man, biker hit by city councilman).

Citizens (Negative): Negative discussion of everyday individuals/people (e.g., car salesman who refuses to sell hybrids).

Citizens (Neutral): Neutral discussion of everyday individuals/people.

Clean coal and other new coal technology: Discussion of technology specifically designed for use in the coal industry, mining, processing, and use.

Coal pollution and effects: Discussion of negative effects of the coal industry, effects of coal use, or other coal-related topics (e.g., people hurt by mountaintop removal mining). Coal must be specifically referenced.

Oil/petroleum industry: Discussion of the oil industry actions and policies.

Other oil issues: Discussion of issues regarding oil, but not specifically the petroleum industry. This includes research dealing with oil, petroleum, and gasoline research, or oil spills. Oil, petroleum, or gasoline must be specifically referenced.

Sustainable energy sources (ethanol, solar, wind, etc): Discussion of alternative energy sources such as wind power, solar power, biofuels, tidal energy, and geothermal energy.

Energy conservation: Discussion of efforts to conserve energy. This does not include discussion of alternative energy sources. Examples would be posts about compact fluorescent light bulbs, which are more energy efficient than incandescent, or calculating carbon footprints.

Other energy issues: Discussion of energy issues other than energy conservation, energy policy, or alternative energy. An example would be a massive blackout in New York City.

Environmental resource conservation: Discussion of protecting or conserving environmental resources such as rivers, water in general, timber, or mountains.

Nature/Wilderness: Discussion of wildlife, habitats, or the environment that does not involve pollution. An example includes posts about environmental appreciation.

Wildlife conservation: Discussion of efforts to protect wildlife and wildlife habitat.

Source of the story: There is typically a note below the post reading “[Via ____]” identifying where a story came from. Select the choice below that best describes the site linked. If the text of the post instead identifies the source, select the best choice according to that information. If the post is original content not cited from another source, select “Original content.”

Blog: This refers to other weblogs, defined as a “[web]page that is frequently updated with entries placed in reverse chronological order, with links to the online material you cite” (Blood, 2002, p. 39).

Commercial company: This refers to an organization with the primary purpose of selling goods or services for a profit. This does not refer to a non-profit organization that happens to be selling a product.

Mainstream media: This refers to traditional major media outlets including corporately owned television stations, newspapers, radio stations, magazines, or their related websites.

Non-governmental organization: This refers to an organization that is run independent of any national, federal, state, city, county, or other government and does not operate primarily to make a profit. Examples are churches, environmental groups (e.g., Sierra Club, Defenders of Wildlife Action Fund), and civic organizations (e.g., Kiwanis, Elks).

Original content: This refers to content not identified as being from an external source or Treehugger reader. Examples are interviews, product reviews, or personal stories and commentary from staff members.

Treehugger users: This is selected when the post identifies the story as being inspired by, or suggested by, an otherwise unaffiliated citizen by email, the forums, or other identified means.

If the unit is a post, what is the overall tone of the post: Select the option most appropriate for the given post.

- **Positive:** optimistic, stressing fairness, logical and sensitive demeanor
- **Negative:** hostile, oppositional, or aggressive language
- **Neutral:** void of judgment, only statements of facts or reports of events (Bichard, 2006, p. 334)

Metacommunication frame: this frame “[includes] communication about others’ communication (i.e. other media sources or other individuals)” (Constantinescu & Tedesco, 2007, p. 452). Code this as present if any of the following conditions are met:

- Does the story include the post author’s own opinions?
- Does the author of the story cite other media sources, including through the use of hyperlinks?
- Does the story mention how other media has handled the issue discussed?
- Does the story mention/discuss the communication strategy of a particular individual or group of individuals? (Constantinescu & Tedesco, 2007)

Internally focused/Self-reflexive: This refers to discussion of communication by or from Treehugger, writers on Treehugger, users on Treehugger, or other Discovery Communications affiliates (i.e., Planet Green, Discovery).

Externally focused: This refers to discussion of communication by or from a person or group not connected with Treehugger as well as citation of other media sources.

If internal/self-reflexive, what is the focus?: If the metacommunication frame is internally directed select the option that best describes the object of the metacommunication frame.

Treehugger post: Any blog post from Treehugger.com.

Other Treehugger-produced material: This refers to non-blog post content on Treehugger (e.g., “guides,” quizzes).

User-generated content: This refers to communication created by non-staff users of Treehugger (e.g., comments, forum entries, emails).

Valence: This refers to attributes of frames that suggest positive or negative aspects, solutions, or treatments. Frames without such value elements are considered neutral. (de Vreese & Boomgaarden, 2003)

Positive: This valence refers to the frame being characterized as having primarily beneficial or high worth aspects, solutions, or treatments (de Vreese & Boomgaarden, 2003).

Negative: This valence refers to the frame being characterized as having primarily unfavorable, harmful, or low worth aspects, solutions, or treatments (de Vreese & Boomgaarden, 2003).

Neutral: This valence refers to the frame not being characterized by value, but presenting statements of fact only.

Affirmative: For comments, this refers to optimistic or affirmative reactions to the article, comment, or other Treehugger-related content.

Challenging: For comments, this refers to negative or dissenting reactions to the article, comment, or other Treehugger-related content.

General discussion: This refers to comments, posts, or other Treehugger-related content that communicate no value position, but simply add information to the discussion.

If external, what is the focus?: When metacommunication frames are externally directed, choose the option that best describes the focus of the frame.

Blog: This refers to other weblogs, defined as a “[web]page that is frequently updated with entries placed in reverse chronological order, with links to the online material you cite” (Blood, 2002, p. 39).

Commercial company: This refers to an organization with the primary purpose of selling goods or services for a profit. This does not refer to a non-profit organization that happens to be selling a product.

Mainstream media: This refers to traditional major media outlets including corporately or independently owned offline television stations, newspapers, radio stations, magazines, or their related websites.

Non-governmental organization: This refers to an organization that is run independent of any national, federal, state, city, county, or other government and does not operate primarily to make a profit. Examples are churches, environmental groups (e.g., Sierra Club, Defenders of Wildlife Action Fund), and civic organizations (e.g., Kiwanis, Elks).

Non-political individual/persons: This refers to a person or temporary, unofficial group of people who are not directly involved in the political system, commercial business, or a non-governmental organization.

Political organization/figure: This refers to politicians, political parties, or other governmental entities and their websites.

If the focus of the metacommunication frame is external, how is it valenced?:
When metacommunication frames are externally directed, choose the option that best describes the focus of the frame.

Number of hyperlinks within the post: Enter the number of unique hyperlinks here only if coding a post.

Destination of hyperlinks: Select all options below that describe online destinations hyperlinked within the post.

Email address/contact page: This refers to links that lead directly to an email address (“mailto:” links) or pages solely created to allow users to contact someone or some group.

Interactivity present: (check all that apply): Select each level of interactivity below that is fulfilled by the criteria immediately below.

Textual: This refers to interactive features included in a blog post that facilitate human-to-human interaction (e.g., forums, chats, discussion boards), rhetorical devices that are used to directly appeal to readers (e.g., calling to action, direct appeals, use of second person), and interactive metacommunication.

Technical: This refers to interactive features that facilitate human-to-system interaction (e.g., polls, surveys, video, audio, slideshows).

Technical interactivity present: Select all technical interactive features present in the blog post.

Audio: This refers to “presence of audio files regarding content (e.g., interviews or music)” (Beyers, 2006, p. 225) playable directly within the web browser.

Banner/image link: This refers to photos that operate as hyperlinks, and that always send users to the same place online. This also includes links that may be animated but are not able to be personalized by the user (McMillan et al, 2008).

Direct link to static downloadable material: This refers to users being given the opportunity, through hyperlink, to download “‘unchangeable’ items such as a book, brochure, or email newsletter” to their computer (McMillan et al, 2008, p. 824).

Games/quizzes: This refers to responsive games or quizzes meant for entertainment purposes, though they may have education merit.

Interactive graphs: This refers to “visual representation of data, objects, concepts, or processes in an animated and interaction presentation, possibly with sound” (Beyers, 2006, p. 225).

Hyperlinks: These are standard text only navigation elements that cannot be personalized and always send users to the same place online (McMillan et al, 2008).

Personalized downloadable material: This refers to users being given the opportunity “to customize what he/she wants [and download it to their computer]. For example, requesting a report based on a set of symptoms is personalized because the individual indicates specific information needed” (McMillan et al, 2008, p. 824).

Photo gallery: This refers to multiple pictures in a blog that are not animated.

Photo slideshow: This refers to an animated or Flash presentation of multiple photographs. These might automatically change photos or might require users to click through the photos.

Polls/surveys: This refers to “actions that offer users a ‘set’ of options that are the same for all users.” For example, online surveys and poll are the same for all users because “all users answer the same questions” (McMillan et al, 2008, p. 824).

Search function: This refers to navigation elements that can be personalized by users. Typically these are boxes where a user can enter their own search terms (McMillan et al, 2008).

Video: This refers to “presence of video files regarding content (e.g., interviews, reports)” (Beyers, 2006, p. 225) playable directly within the web browser.

Textual interactivity: Select all textual interactive features present in the blog post.

Call to action/Direct appeals: This refers to a direct request to do a particular action (e.g., vote for someone, contact a government figure, recycling) or plea to agree to a particular understanding of an issue.

Direct address/inclusive language: This refers to the use of second person by a writer in order to create a sense of connection or unity with the reader.

Email/contact page link: This refers to the presence of a hyperlink that connects directly to an email address or contact page.

Forward to friend link: This refers to a hyperlink that facilitates users in sending the page or other information to someone else.

Metacommunication as textual interactivity: This refers to content that contains the metacommunication frame and directly addresses the blog author or a user on Treehugger.

This includes when someone is:

- challenging or complimenting a writer on their presentation of the facts
- quoting a user or author to support their affirmation
- challenging or criticizing a writer's points.
- contributing information specifically to further a writer's point
- requesting further information from a writer
- questioning a writer on their writing or point in another way

This would NOT include:

- doing any of the above in relation to a writer of an unrelated post or blog/forum comment
- doing any of the above in relation to any other communicator not present in the current discussion (e.g., external metacommunication, other Treehugger content, Treehugger-affiliates)
- hyperlinking another post or website

Reinforcement: Interactive metacommunication frame that supports a statement being referenced.

Compliment: Interactive metacommunication frame that praises a statement and the person who said/wrote it.

Debate: Interactive metacommunication that opposes the statement it is referencing and offering another viewpoint.

Criticism: Interactive metacommunication that opposes the statement it is referencing, but offers nothing other than disapproval.

Request for information: Interactive metacommunication that asks or suggests that the author/speaker of a specific statement provide additional information about what was said/stated.

Other query: Interactive metacommunication that asks something in regards to a specific statement, but not information about the subject at hand (e.g., “Did you get that information from CNN?”).

Framing: “[selecting] some aspects of a perceived reality and [making] them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described” (Entman, 1993, p. 52).

NOTES

¹ Boing Boing (<http://www.boingboing.net>), Gizmodo (<http://gizmodo.com>), Lifehacker (<http://lifehacker.com>), and Treehugger are all filter blogs that frequent Technorati's (2008b) top 30 most popular blogs. Technorati has been used previously for blog ranking previously by Reese et al (2007).

² *Who Killed the Electric Car?*, *An Inconvenient Truth*, and *March of the Penguins* rank as the #53, #4, and #2 highest grossing documentaries since 1982 according to Box Office Mojo (<http://www.boxofficemojo.com/genres/chart/?id=documentary.htm>).

³ Examples from 2008 include *Elle*, *The New York Times Magazine*, *Vanity Fair*, *Time*, *Mother Jones*, *Fortune*, *The New Republic*, and TreeHugger's partner outlet, *Discover*.

⁴ Report the results from daily ranking (Technorati, Inc., 2008b).

⁵ The third reason for less interactive features was because they were burdensome for the campaigns. Responding to emails, running chats, and moderating message boards required more resources than they were often willing to dedicate.

⁶ TreeHugger classifies each post into one of eight category headings. Categories include *Cars & Transportation*, *Science & Technology*, *Design & Architecture*, *Culture & Celebrity*, *Travel & Nature*, *Food & Health*, *Business & Politics*, *Fashion & Beauty*, *Interact*, *Take Action*, and *TreeHugger Exclusives*.

⁷ RSS (Really Simple Syndication) is a "family of document types" which allow individuals to subscribe to a website's updates (Dasgupta, 2006, p. 437).

⁸ Percentages following issues discussed indicate the percentage of posts or comments in which the issue was covered. As opposed to TreeHugger categories, which are mutually exclusive, multiple issues could be, and usually were, present in a single post or comment.

⁹ The general issues such as "science & technology" or "pollution" served as catch-alls only when the most specific issues (e.g., "gadgets & purchasable products," "coal pollution & effects") did not apply. See the codebook in k B for operational definitions.

¹⁰ "A Blog Carnival is a particular kind of blog community. There are many kinds of blogs, and they contain articles on many kinds of topics. Blog Carnivals typically collect together links pointing to blog articles on a particular topic" (Blog Carnival LLC, 2009).

¹¹ Email address/contact page, "forward to a friend" links, banner links, interactive graphs, personalized downloadable material, photo slideshow, and search function were not included because they had no more than one applicable posts in the sample. Posts with hyperlinks were also not taken separately because the frequency of those posts was so close to 100 percent.