How Do Users Evaluate the Credibility of Web Sites? A Study with Over 2,500 Participants

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Abstract

In this study 2,684 people evaluated the credibility of two live Web sites on a similar topic (such as health sites). We gathered the comments people wrote about each siteís credibility and analyzed the comments to find out what features of a Web site get noticed when people evaluate credibility. We found that the ìdesign lookî of the site was mentioned most frequently, being present in 46.1% of the comments. Next most common were comments about information structure and information focus. In this paper we share sample participant comments in the top 18 areas that people noticed when evaluating Web site credibility. We discuss reasons for the prominence of design look, point out how future studies can build on what we have learned in this new line of research, and outline six design implications for human-computer interaction professionals.

Keywords

Credibility, Online Trust, World Wide Web, Web Site Design, Trustworthiness, Captology, Information Design, Prominence-Interpretation Theory, Content Analysis, Online Advertising, Persuasion, Online Research.

Demographics of Study Participants

Female:	58.1%
Male:	41.9%
Average age:	39.9
Average use of Web (hours/week):	19.6

The respondents who contributed demographic information came from 47 states and the District of Columbia. The vast majority of participants live in the U.S., although people from 29 other countries also participated.

Industry/category

E-commerce, entertainment, finance, health, news, nonprofits, opinion/review, sports, travel, Web search.

Project statement

Our research focuses on Web site categories that (1) are common on the Web today, (2) have relevance to Web credibility, and (3) have a consumer focus (created for ordinary Web users, as opposed to specialists). After three years of researching Web credibility, the Stanford Persuasive Technology Lab began developing a new online method for comparing the credibility of live Web sites. To do this, we performed iterative design and pilot testing, including over 200 people over the course of six months. After refining our method, we began to collaborate with Consumer WebWatch, an affiliate of Consumers Union, to develop a large-scale study, one that would examine 10 content categories and include 100 Web sites.

Ultimately, our research has allowed us to gain significant insights into factors affecting the perceived credibility of online information and services, and has resulted in practical design guidance for human-computer interaction (HCI) practitioners.

PREVIOUS RESEARCH

In recent years, a small body of quantitative research related to Web credibility has emerged [4-6, 9, 10, 12-23, 25]. This work sheds light on what leads people to believe—or not believe—what they find online. Some of these studies have examined the construct of "trust," with most research in this vein focusing on trust in e-commerce situations [4-6, 9, 20-23, 26]. Other studies have focused on "credibility," a concept related to—but not identical to—trust [10, 12-19, 25].

The results from these studies have been at times predictable and at other times provocative. The convergent findings in some of these studies have led to research-based guidelines for designing credible Web sites [12].

Seeing convergence in research findings and having concrete design guidelines can be reassuring for both researchers and designers; however, the truth is that our understanding of Web credibility is far from complete. As an HCI community, we are still in the early stages of understanding how people evaluate the credibility of Web sites.

To help enhance the collective knowledge about Web credibility, we have drawn from our previous work and the work of other researchers to conduct further investigations in this area. The research described in this paper complements what has been learned in previous investigations. When viewed in the light of Prominence-Interpretation Theory [11], the findings from this and other studies on Web credibility work together well [10, 12-19, 25], with various pieces of the Web credibility puzzle fitting in their proper places.

Project participants

This project represents collaboration between researchers from the Persuasive Technology Lab, Consumer WebWatch, and Sliced Bread Design.
A total of 2,684 people completed the study. We did not require people to leave demographic information, yet 60.1% of the participants did so (see sidebar).

Project dates and duration

We began recruiting participants in May 2002 by contacting nonprofit groups, such as the Children's

Brain Tumor Foundation, and offering a $5 donation for each of their supporters who completed the study. We drew on diverse charity groups to get a broad range of participants. We collected data via our online study site for 60 days. In the past we've found that obtaining a truly representative sample of Web users is not possible—at least not possible without an enormous budget. In our view, the charity recruiting method is better than other tractable alternatives (for example, offering money directly to people, setting up a contest, spamming, and so on).

Process

After being contacted by a nonprofit group or a friend, people interested in helping with the study:

1. Logged on to www.mostcredible.org.
2. Were welcomed and introduced to the study.
3. Were randomly assigned to one of ten content categories (such as health or news).
4. Were given two live Web sites to evaluate for credibility.
5. Reviewed the two sites assigned to them.
6. Ranked the two sites according to credibility.
7. Left comments about each site's credibility.

Research details

Prior to recruiting research participants, we selected 10 Web sites within each of the 10 content categories mentioned previously. Choosing the 10 Web sites for each category was not an easy task. We wanted to include a wide range of Web sites in each category. We knew the choice of Web sites would be important, so we sought input from the Consumer WebWatch advisers, among others. Example Web sites used in this study include: Amazon (e-commerce), E! Online (entertainment), E*Trade (finance), WebMD (Health), CNN (news), American Red Cross (nonprofit), E-pinions (opinion/review), Yahoo! (Web search), ESPN (sports), and Expedia (travel).

With the 100 sites selected and programmed into the Web-based research system, we were ready to begin recruiting participants, who provided comments and ratings regarding the perceived credibility of the sites they visited in our study.

The most valuable data from this research is the comments that people made about the Web sites they evaluated. These comments and associated information became the focus of analysis once data collection was complete.

After collecting comments over the course of 60 days, we went through the database, noting cases that showed evidence of someone completing multiple sessions or tampering with our randomization scheme. After cleaning the data, two independent coders went through the participant comments and assigned codes to mark what was said in the comment. A third coder then went through the data to resolve discrepancies. Each comment could receive more than one code. For example, the comment below would be coded in two categories: design look and information bias.

> "This Web site looks more professional than the other, but I believe it is also more biased."

After coding each comment, we tallied the frequency for each code category. In other words, we calculated how often a specific issue was mentioned. For example, we found that information bias was mentioned in 283 of the 2,440 comments—11.6% of the time. This frequency score gave an indication of what criteria people used—or said they used—to make their credibility evaluations of the sites they saw. This large collection of comments about Web credibility offers many opportunities for analysis. We present one type of analysis here; other analyses and interpretations of the data are possible.

Figure 1: WebMD (health category)

Figure 2: E*Trade (financial category)

Results

The following table summarizes how often different issues appeared in the credibility comments from this study:

Topic of Credibility Comment	Incidence
Design Look	46.1%
Information Design/Structure	28.5%
Information Focus	25.1%
Company Motive	15.5%
Usefulness of Information	14.8%
Accuracy of Information	14.3%
Name Recognition & Reputation	14.1%
Advertising	13.8%
Bias of Information	11.6%
Tone of the Writing	9.0%
Identity of Site Sponsor	8.8%
Functionality of Site	8.6%
Customer Service	6.4%
Past Experience with Site	4.6%
Information Clarity	3.7%
Performance on a Test	3.6%
Readability	3.6%
Affiliations	3.4%

(Categories with less than 3% incidence are not in this report.)

Here we discuss each category of comment, from most prominent to least. We also present sample comments that were coded in each category.

1. Design Look of the Site

When evaluating the credibility of a Web site, participants commented on the design look of the site more often than any other Web site feature, with 46.1% of the comments addressing the design look in some way. When coding for comments on "design look," researchers included comments on many elements of the visual design, including layout, typography, white space, images, color schemes, and so on. The comments could be either positive or negative:

- This site is more credible. I find it to be much more professional looking. —M, 38, Washington
- More pleasing graphics, higher quality look and feel. —F, 52, Tennessee
- Just looks more credible. —M, 24, New Jersey
- Actually, despite the subject of the Web site, it looks very credible. This may be due to the subdued color scheme and the font used on the left hand side of the page. —F, 29, California
- I know this is superficial, but the first thing that struck me is the color difference. The … site is a soothing green (sort of like money) while the [other] site is a jarring purple. —M, 56, Virginia
- The design is sloppy and looks like some adolescent boys in a garage threw this together. —F, 48, California
- Not very professional looking. Don't like the cheesy graphics. —F, 33, Washington.
- Looks childish and like it was put together in 5 minutes. —F, 25, Maryland

2. Structure of Information

After design look, the next category that people commented on in assessing credibility was the structure of the site's information, mentioned in 28.5% of the total comments. The participant comments discuss how well or poorly the information fit together, as well as how hard it was to navigate the site to find things of interest. Sites that are easy to navigate were seen as being more credible:

- This site is very well organized, which lends to more credibility. —M, 33, Chicago, IL
- This one is more credible because it is more organized. —F, 57, Maryland
- Horrible site, information badly presented. They try to put everything on the front page, instead of having multiple layers of navigation. This to me suggests that they developed this thing on a whim. —M, 42, Canada

3. Information Focus

In 25.1% of the comments about credibility, people in this study referred to the focus of information on the site. The comments varied in content. At times, a focused site was seen as more credible; other times a tight focus hurt credibility:

- Credible because of the breadth of information available. —M, 35, Northridge, CA
- I find this site trustworthy because it offers a simple message to a very targeted community. —F, 34, Boston, MA
- This Web site is filled with too much crap. I feel as though part of the reason it seems less credible is the fact that the crap they fill it with is taking attention away from their own Web site. —F, 23, Chicago
- Broad categories, but shallow reviews and comparisons. —M, 35, San Francisco
- This site seems focused on body image. They have articles about feeling good naked, the perfect swimsuit for every body type, and toning exercises. Not a lot of solid health information. —F, 22. Minnesota

4. Underlying Motive

We found that 15.5% of the comments in this study addressed the perceived underlying motive of the site or the institution sponsoring the site. These comments often referred to how Web sites lost credibility when the only purpose seemed to be selling things or getting money from users. In other cases, Web sites won credibility by conveying motives that people found to be admirable:

- The fact that this site has a global conscience impressed me and made me feel that it was more credible. —F, 40, Atco, NJ
- This site looks like its goal is to help you find what you are looking for. —F, 55, CA
- I would trust this site because it's run by a religious denomination whose aim is socially responsible investing. —F, 54, La Grange, NY
- Seems too "commercial" and therefore less objective. —M, 52, Houston, TX
- This site says to me "give us your money and get out" —F, 29, New Westminster, British Columbia
- Doesn't seem credible when they give a product a good review and give you a link to order it too. —F, 38, Houston, TX

5. Usefulness of Information

When evaluating Web-site credibility, people in this study commented on the usefulness of the site's information 14.8% of the time. As one might expect, useful information led people to see the Web site as more credible:

- This Web site provided useful and interesting knowledge about events in sports. —F, 30, New Jersey
- Liked it because it is something that would be useful to me and other family members. —F, 18, Hinsdale, IL
- I searched for a particular scientific term, and this search engine came up with more useful Web sites than the other one. —F, 40, WA

6. Accuracy of Information

In 14.3% of the comments about Web credibility, visitors addressed the (perceived) accuracy of the site's information. This category includes comments in which people expressed doubt about the information on the site. But this category also includes comments where people confirmed the accuracy of what they found on the site. In assessing accuracy people often drew on their own knowledge:

- Most of the articles on this Web site seem to be headline news that I have already heard, so they are believable —F, 50, Brunswick, OH
- I work at AOL Time Warner and read the article regarding accounting problems. It accurately quoted an internal memo from Dick Parsons and the general tone was positive, especially given the current business environment. —M, 45, New York
- This site is totally based upon personal opinion and admittedly old data and unscientific methods (see FAQ). —F, 35, Glenwood Springs, CO

7. Name Recognition and Reputation

One strategy for evaluating credibility seemed to be relying on the name recognition or reputation of the site operator (such as the Red Cross). In 14.1% of the comments, users referred to issues of reputation and name recognition. Users frequently commented on unfamiliar sites, typically harming the credibility of the site. In other cases, people saw a familiar company name and inferred that the site was credible because of that:

- This site is less credible because the name is unfamiliar. —F, 22, Silver Springs, MD
- It seems to me that credibility is all about the name and having heard about it. —M, 25, Grand Rapids, MI
- CNN is well recognized in the U.S. as a provider of news. Their reputation is not something they would put at risk with unfounded claims or under-researched articles. —M, 24, Chicago, IL
- The Mayo Clinic has a great reputation. I would trust the info I found at this Web site. —M, 34, Hartford, CT

8. Advertising

People in this study used advertising on a site as a criterion for judging the site's credibility. In 13.8% of the comments, users referred to advertising, usually negatively. But at times, study participants mentioned judicious use of advertising in a positive way. Pop-up ads were widely disliked and typically reduced perceptions of site credibility:

- The advertisements were distracting and reduced the credibility to me. Any site that gives so much real estate to advertisers probably doesn't have my best interests in mind. —M, 25, Seattle, WA

- Every link brought pop-under ads as well as traditional ads. I feel their view is colored by their desire to boost their advertising revenue: that they perceive their primary clients to be their advertising base, rather than the people who use their site. —F, 43, Palatine, IL
- This [site] didn't have any advertising, which makes it more credible in my opinion. —F, 34 Des Moines, IA

9. Information Bias

In 11.6% of the comments, people in this study referred to information bias when evaluating the credibility of the Web sites they were viewing:

- This site is more commentary, and thus more opinionated. Accordingly, I liked it more, but the arguments are more disputable; thus less "credible." —M, 39, Washington, D.C.
- The headlines and editorial copy didn't even make the pretense of being unbiased, something I think is critical for an organization or media outlet to call itself "news." —F, 30, Brooklyn, NY
- It is credible because the opinions contained therein are based on unbiased research. —F, 32, Chalfront, Pennsylvania

10. Tone of the Writing

When assessing credibility, people noticed the tone of the writing, such as the use of slang or "marketing language" on a Web site. The participant comments include writing tone as a criterion 9.0% of the time, usually in a negative way:

- "Holy Crap" and other slang or poor language harms credibility. Credible people tend to understate. —F, 53, CA
- "Cops" to search lake again vs. "Police," "8 hurt" vs. "8 injured," and so on. This site uses lower English and lowers its credibility. —M, 44, Houston, TX
- Seemed less sensationalistic, more dry, and therefore more credible. —M, 38, Seattle, WA

11. Identity of the Site Operator

In 8.8% of the comments we collected, study participants addressed site operators, disclosing information about themselves. Comments coded this category indicate that a Web site wins credibility points by giving information about the organization behind the Web site: who they are, what they do, and how to contact them.

- This site contains a clear description of the goals and activities of this charity. There are contact names and e-mail/snail mail addresses. There is even a phone number. —F, 44, Seattle, WA
- This site might be a good place to start, but I don't really know what its mission is – especially for a for-profit venture. —M, 34, Hartford, CT

12. Functionality of the Site

While study participants experienced the functionality (or lack of it) whenever they visited a Web site, the comments referring to credibility include issues of site functionality 8.6% of the time, usually in a negative way: the site was down, links were broken, search features were not helpful. The functionality of a site, whether under the direct control of the site sponsor or not, affected the perceived credibility of the site:

- The command lines that appear at the top—a bug—make it feel like no one is watching, taking care of the site. —F, 35, San Francisco, CA
- Biggest complaint is the poor search facility. A search produces only three items. —M, 50, Vallejo, CA

13. Customer Service

We created a category called “Customer Service” to account for comments people made about the perceived relationship between the company and the end user. In other words, the comments in this category are about how the sponsoring organization operates and, especially, how the organization treats customers along the way. People commented on these customer service issues 6.4% of the time:

- This site seemed to have less accountability to its customers on the items that can be purchased. —F, 46, MS
- They spell out very clearly what one would get for becoming a member. —F, 34, Boston, MA

14. Past Experience with the Site

In assessing the credibility of the sites, people sometimes drew on their past experiences with a site to reach a conclusion. This occurred in 4.6% of the comments we collected. In most comments of this nature, past experience with a site boosted credibility—but not always. A negative previous experience with a site led to a lower credibility evaluation:

- I’ve used this site before and it did not meet my expectations. —F, 50, Shelton, WA
- I have used it frequently and find it very useful. —F, 50, MO

15. Information Clarity

In 3.7% of the comments, users in this study addressed the clarity of information (or the extent to which the information was easily understood) when evaluating a site’s credibility:

- Clear, concise information on home page; tells you what you need to know right away in an upfront manner. —F, 51, Melbourne, Victoria, Australia
- Easy to understand…. I felt comfortable reading and understanding the information presented. —F, 33, Lawrenceville, NJ
- Very wordy and vague information. —F, 50, CA

16. Performance on a test

In relatively few cases, people devised their own tests to evaluate credibility (for example, performing a search on the site). The results of the test helped them form an assessment of the site credibility. Tests of this nature showed up in 3.6% of the comments:

- Had more credible hits when searching for biogeochemical data. —M, 55, TN
- I did not find hypothyroidism or thyroiditis on the Web site despite the commonality of the disease. —F, 41, NY

17. Readability of text

Only 3.6% of the comments mentioned the readability of the Web site as a credibility issue. Sites that were unreadable—for whatever reason—lost credibility points:

- The format was easier for me to read. —M, 52, Bethlehem, PA
- The page is not easily readable. The font "Courier" contributed to this. —M, 40, Baden, Austria

18. Site Affiliations
In 3.4% of the comments, people claimed a site won credibility by showing an affiliation with an organization they knew and trusted:

- Affiliation with a prestigious university adds to a sense of objectivity. —F, 27, CA
- Credibility increased by seals of approval from known companies. —F, 21, Charlottesville, VA

Differences in Results by Category
In addition to analyzing the comments as a whole, we also analyzed the comments according to content category, and finding differences. Although space constraints will not allow a full presentation, these differences suggest that content is a factor that affects prominence; people notice different types of things when examining different types of sites. Following are sample results of the largest differences we found between a single category mean and the overall mean.

When evaluating **e-commerce sites**, people in this study commented on name recognition and reputation considerably more (in 25.9% of comments) than the overall average (14.1%). Also, comments about customer service were more frequent (16.7% v. 6.4%).

For **news sites**, people in this study mentioned information bias more (30.2%) than the overall average (11.6%).

When evaluating the credibility of sites for **nonprofit organizations**, people commented much less frequently on the information structure (18.2%) compared to the overall average (28.5%). Issues of identity were mentioned much more frequently in this category (28.9%) compared to the overall average (8.8%).

When evaluating the credibility of **opinion / review sites**, people noticed two types of issues much more frequently than the overall average: information bias (23.8% v. 11.6%) and information accuracy (25.4% v. 14.3%).

When evaluating the credibility of **travel sites**, people commented much more frequently about issues of customer service (18.1%) compared to the overall average (6.4%).

For **Web search sites**, people in this study commented much more frequently on three issues related to Web credibility, compared to the overall average: information design (42.6% v. 28.5%), functionality (20.5% v. 8.6%), and advertising (24.6% v. 13.8%). Also, when evaluating this category, people tended to perform their own tests more often (13.8% v. 3.6%).

Discussion

This section discusses some of the study findings, suggesting ways to interpret the results, and provides design implications and guidance for HCI professionals.

Research in light of prominence-interpretation theory
To better understand the contributions of the research described in this paper and how these findings complement previous work in this area, one must have a basic understanding of Prominence-Interpretation Theory (P-I Theory) [11].

In brief, P-I Theory posits that two things happen when people assess credibility: a person (1) notices something (Prominence) and (2) makes a judgment about it (Interpretation). If one or the other does not happen, then there is no credibility assessment. The process of noticing prominent elements and interpreting them will typically happen more than once when a person evaluates a Web site, with new aspects of the site being noticed and interpreted until the person reaches satisfaction with an overall credibility assessment or reaches a constraint, such as running out of time. (Covered in more detail elsewhere [11], the theory suggests that various factors affect both Prominence and Interpretation.) A summary of P-I theory can be annotated as follows:
Prominence X Interpretation = Credibility Impact

Previous research on Web credibility has investigated the Interpretation component in this theory [10, 12-19, 25]. These previous studies presented users with Web site elements—such as a privacy policy or a banner ad—and investigated the impact these elements would have on credibility. These previous studies were about Interpretation; in most cases, Prominence played no role.

In contrast to previous work, this study focuses on Prominence. It investigates what people notice when asked to evaluate the credibility of a Web site.

To gain a rich understanding of credibility impact, one must account for both Prominence and Interpretation. Studies focusing on the two separate components can be woven together to create a rich warp-and-woof understanding of Web credibility. The study in this paper appears to be the first investigation into the Prominence component when evaluating Web site credibility.

How these results complement previous research
As explained in the project statement, previous research on Web credibility has typically examined how people interpret the different elements of Web sites; they do not assess what users notice when evaluating actual, real-world sites. To be sure, these previous studies have value: They provide a measure of how people respond to various Web-site elements *if the elements get noticed*.

For example, in previous studies, people have said that Web sites that have privacy policies win credibility points [17, 18]. But what if people don't notice the privacy policy? P-I Theory suggests that if people don't notice an element, such as a privacy policy, then it will not have any impact on the overall credibility assessment.

How likely are people to notice privacy policies? While not a perfect measure, the research described in this paper gives one indication. Our finding is that people rarely noticed privacy policies on any of the 100 Web sites in our study.

An additional example helps show how previous studies and the current research work together in understanding Web-site credibility evaluations. In previous studies, people have reported that Web sites that "look professionally designed" win credibility points [17, 18]. That's an issue of Interpretation. Our current study suggests that people frequently notice the design look of the site. That's an issue of Prominence. As P-I Theory suggests, the combination of high Prominence

and favorable Interpretation make "professional-looking design" a Web-site quality that will significantly boost a site's overall perceived credibility.

As one might expect, our collective understanding of Web-credibility assessments will become richer as research continues to give insight in these two areas: (1) what people notice when evaluating Web-site credibility, and (2) how people evaluate different Web-site elements or features. Both paths are worthy directions for future research.

It's important to note that looking good is often interpreted as being good—and being credible. Since at least 1939, the social psychology research has shown that physically attractive sources (usually people) have been perceived to be credible sources [1, 2, 3, 7, 8]. This basic human processing bias—"looking good is being good"—also seems to hold true for evaluating the credibility of Web sites, especially since design look is highly noticeable.

Why Is "Design Look" So Prominent?

The results of this research show that the "design look" of Web sites was clearly the most prominent issue when people evaluated Web-site credibility. Almost 50% of comments about Web credibility contained something about the design look of the site, either in general ("looks professional") or in specifics (the layout, the colors, and so on). The dominance of design look may be surprising at first. One might ask, Are people really so influenced by design look and not by more substantial issues? The answer appears to be yes—at least in this setting.

The research context is another factor that likely contributed to the overwhelming prominence of "design look" as a rationale for determining site credibility. Because people participated in this study to earn a donation for a nonprofit organization—not because of a deep personal interest or need—they did not likely have the motivation to process the Web sites deeply. According to the Elaboration Likelihood Model (ELM) [24], without deep motivation, people will rely on peripheral cues, such as appearance, for making assessments. ELM would predict that if the participants had *both* the ability and the motivation to scrutinize these sites carefully, the percentages in this study would change, with peripheral cues playing a less significant role.

Although people in this study were probably not deeply involved in the evaluation task, this is not a fatal flaw in the research. Web users typically spend small amounts of time at any given site or individual page, and are thus likely to develop strategies for assessing credibility quickly. One could argue that people typically process Web information in superficial ways, that using peripheral cues is the rule of Web use, not the exception (for empirical research supporting this point, see [27]). From a user perspective, there are too many competitors on the Web for deep credibility evaluation. Even the words people use to describe Web use—"visiting sites" and "surfing the Web"—suggest lightweight engagement, not deep content processing. Research has yet to examine the relationship between engagement level and credibility assessments online.

An important follow-up study would be to manipulate the engagement level of the participants (for example, finding health information for a loved-one in dire need) and see how the comments about credibility change. Studies along these lines could show how involvement level affects issues of Prominence—what gets noticed. Our hypothesis is this: Even for highly involved Web surfers, design look would still play a role in credibility, though it would be less dominant in overall evaluations. The high value for design look is also due to the coding categories themselves. Design look may be the broadest category. Many Web site elements were coded as part of "design look," creating an exceptionally high percentage for this category. In a future analysis,

dividing the “design look” category into more focused categories could be illuminating. Because of the breadth of this category, we suspect that some interesting findings are still concealed in the data.

How to best view the specifics of our results
Because the specific percentages in this study are the result of variables that can change—the coding categories, the study context, the users who chose to participate, the 100 Web sites selected for this study—we caution readers against becoming too attached to these particular values. Although we performed our calculations with care, readers should view the resulting percentages as approximations, especially since this study is an early attempt to measure Prominence. In addition, readers should recognize that not all coding categories are equally narrow. This much is clear: What this study has shown to be prominent is clearly prominent—design look, information structure, information focus, underlying motive, and so on. The elements that ranked high in this study are indeed elements that people notice when evaluating Web sites.

However, it’s unlikely that our research method uncovered *all* the Web site elements that people notice when evaluating credibility. Even though this study makes significant steps forward in identifying Prominence, future studies can draw on what we have done here in order to enhance the research method and the data analysis. For example, creating a more precise coding system will be an ongoing process that will require multiple studies and much debate. Our study serves to provide an *initial set of results* that future research can refine or refute, and that HCI practitioners can rely on as guidelines for which design factors will help or harm the credibility of their sites. In other words, we view our study as the opening statement in a new conversation, not as the final word.

Design Implications

Even though this research topic is new and exploratory, the current study suggests various implications for design. In an effort to create credible Web sites, designers should keep the following in mind.

1. Visual design matters—invest here. No matter how good a site’s content, the visual aspects of a Web site will have a significant impact on how people assess credibility. To create a highly credible Web site, one should invest in the design look of the site.

2. Accept that some elements are outside designer control. The results of this study suggest that some highly prominent elements are not within a designer’s control. For example, someone besides an HCI designer may control the information accuracy or usefulness. Certainly a company’s name recognition and reputation seem outside the scope of HCI.

3. Use research to influence stakeholders in the organization. Although important Web credibility elements go beyond the scope of HCI, reading studies such as this one may positively influence people who control the site content or the company reputation.

4. Make careful decisions about prominence. The results suggest that important Web credibility elements are within designer control. HCI professionals should carefully consider what Web site elements to make prominent. Not everything can stand out at once, so finding the best elements to highlight on a Web site

should be done with care. The perceived credibility of a Web site hinges on these decisions.

5. Ask users about credibility. Although our sample size in this study is large, we found that our pilot study results gave valuable insights into the credibility of Web sites. Asking users to evaluate a Web site is not a new strategy for HCI professionals. However, making it standard practice to examine Web site credibility, even on a small scale, is new.

6. View other work on Web credibility with Prominence and Interpretation in mind. As more studies come forth on Web credibility, HCI professionals can better understand research results by seeing what the study is examining: Prominence or Interpretation or both. A clearer understanding of research findings will lead to better applications of the results in one's own HCI projects.

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