

What Makes a Website Credible?

Prepared for Luke Wroblewski

BJ Fogg, Ph.D. Persuasive Technology Lab Stanford University

Overview of Module

Part 1

"Introduction to Web Credibility"

Part 2

"10 Guidelines for Designing Credible Websites"

Part 3

"Insights from Web Credibility Research"

Part 4 "A Deeper Understanding of Web Credibility"

Introduction to Web Credibility

Part 1 "Introduction to Web Credibility"

Part 2

"10 Guidelines for Designing Credible Websites"

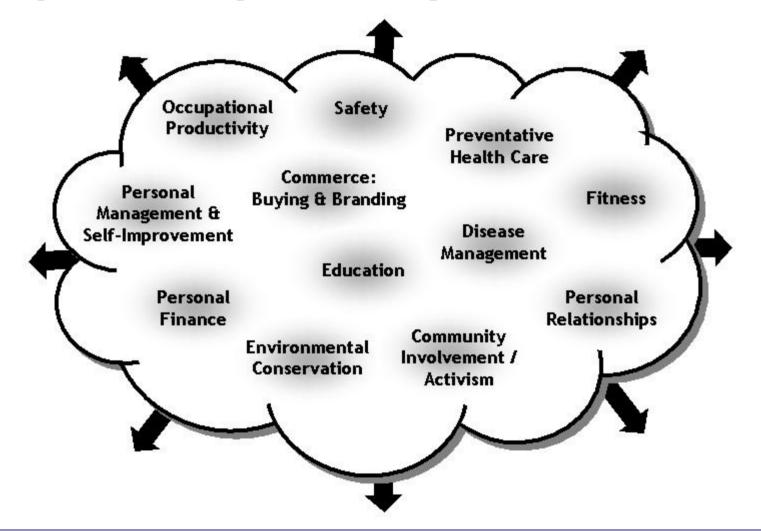
Part 3

"Insights from Web Credibility Research"

Part 4 "A Deeper Understanding of Web Credibility"

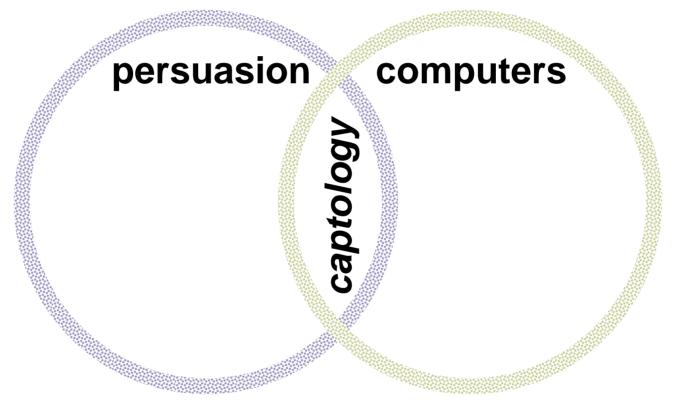
Computers can be persuasive.

They can be designed to change attitudes & behaviors.



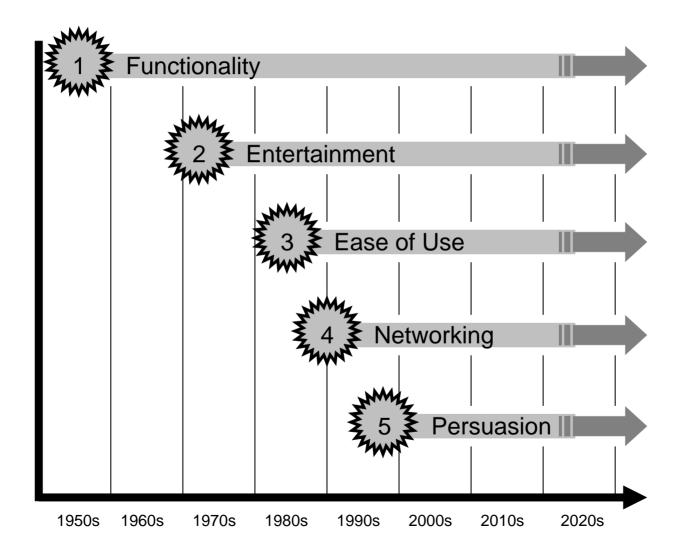
Captology

The study of <u>computers</u> <u>as</u> <u>persuasive</u> <u>technologies</u>



We'll continue to see more overlap.

Captology is new and growing



Computer-based persuasion is special

Compared to print, radio, and TV . . .

- Computers benefit from interactivity.

Compared to humans . . .

- Computers can be more <u>persistent</u>, leverage <u>different modes</u>, <u>scale</u> easily, and more.

Let's talk about Web credibility

Why does Web credibility matter?

Creators

Websites with optimal levels of credibility

Consumers

What to believe on the Web (aka "information quality")

Why does Web credibility matter?



Web has <u>least</u> credible info of any medium Web has <u>most</u> credible info of any medium

Web sites are first customer contact point The Web is not going away

Big money is at stake

Web users can be naïve or lazy

Web-based info & services are common Few have studied this (publicly)

The practical bottom line: Those who can design for credibility gain a strategic advantage.

Web credibility is part of captology

Credibility gives you power to . . .

1. Change user attitudes

For example

- To think positively about the site operator
- To feel comfortable interacting with the site
- To embrace the site's point of view

2. Change user behaviors

For example

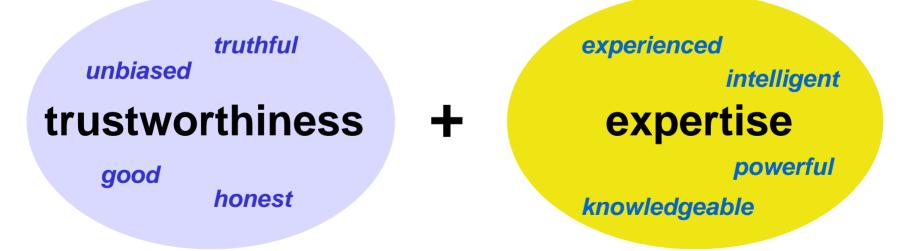
- To register personal information
- To complete e-commerce transactions
- To return to the site often

What is "credibility"?

Believability

or

A perception based on two factors* . . .



*Some studies have shown three or more factors

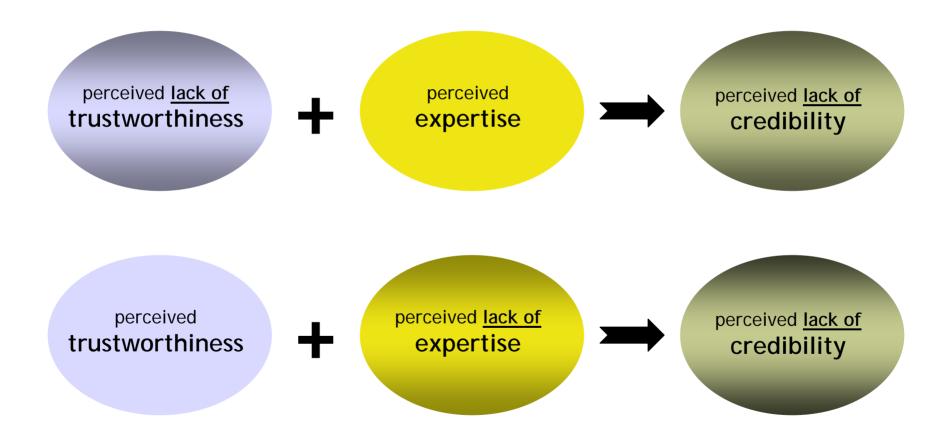
#12

Highly credible websites have . . .

High levels of perceived trustworthiness & expertise



One factor can damage credibility



Some semantic issues

"Credibility" and "Trust"

- Similar terms but not the same construct

Phrases that refer to credibility

- "trust the information"
- "accept the advice"
- "believe the output"

Questions & Discussion on Part 1

Part 1 *"Introduction to Web Credibility"*

Part 2

"10 Guidelines for Designing Credible Websites"

Part 3

"Insights from Web Credibility Research"

Part 4 "A Deeper Understanding of Web Credibility"

Overview of Module

Part 1 "Introduction to Web Credibility"

Part 2

"10 Guidelines for Designing Credible Websites"

Part 3

"Insights from Web Credibility Research"

Part 4 "A Deeper Understanding of Web Credibility"

Origin of the Credibility Guidelines

- Over 3 years of research at the Stanford Persuasive Technology Lab
- Over 5,500 users in studies of various types
 - Lab experiments
 - Surveys
 - Online experiments
 - Content analyses

looks matter

• Design your site so it looks professional (or is appropriate for your purpose).

People quickly evaluate a site by visual design alone. When designing your site, pay attention to layout, typography, images, consistency issues, and more. Of course, not all sites gain credibility by looking like IBM. The visual design should match the site's purpose.

Research support

- chi99, chi00, chi01a, ptl02, cww02, unp (Research sources are on the next slide.)

Research Sources for Guidelines

acm99

Title "Credibility and Computing Technology" Authors Shawn Tseng & B.J. Fogg Source Communications of the ACM, vol. 42, issue 5 (May 1999), pp. 39-44. Online http://captology.stanford.edu/pdf/p39-tseng.pdf

chi99

Title "The Elements of Computer Credibility"

Authors B.J. Fogg & Shawn Tseng

Source Proceedings of ACM CHI 99 Conference on Human Factors in Computing Systems, v.1, pp. 80-87. New York: ACM Press.

Online <http://captology.stanford.edu/pdf/p80-fogg.pdf>

chi00

Title "Elements that Affect Web Credibility: Early Results from a Self-Report Study"

Authors B.J. Fogg, Jonathan Marshall, Othman Laraki, Alex Osipovich, Chris Varma, Nicholas Fang, Jyoti Paul, Akshay Rangnekar, John Shon, Preeti Swani, & Marissa Treinen

Source Proceedings of ACM CHI 2000 Conference on Human Factors in Computing Systems, v.2, New York: ACM Press.

Online No online source yet

chi01a

- Title "What Makes A Web Site Credible? A Report on a Large Quantitative Study"
- Authors B.J. Fogg, Jonathan Marshall, Othman Laraki, Alex Osipovich, Chris Varma, Nicholas Fang, Jyoti Paul, Akshay Rangnekar, John Shon, Preeti Swani, & Marissa Treinen
- Source Proceedings of ACM CHI 2001 Conference on Human Factors in Computing Systems, v. 1, 61-68. New York: ACM Press.

Online <http://captology.stanford.edu/pdf/p61-fogg.pdf>

chi01b

- Title "Web Credibility Research: A Method for Online Experiments and Some Early Study Results"
- Authors B.J. Fogg, Jonathan Marshall, Tami Kameda, Joshua Solomon, Akshay Rangnekar, John Boyd, & Bonny Brown
- Source Proceedings of ACM CHI 2001 Conference on Human Factors in Computing Systems, v.2. New York: ACM Press.

Online

<http://captology.stanford.edu/pdf/WebCred%20Fogg%20CHI%202001%20sh ort%20paper.PDF>

ptI02

- Title "Stanford-Makovsy Web Credibility Study 2002: Investigating What Makes Web Sites Credible Today"
- Authors B.J. Fogg, Tami Kameda, John Boyd, Jonathan Marshall, Ramit Sethi, & Mike Sockol

Source Report from the Persuasive Technology Lab (not peer reviewed)

Online <http://captology.stanford.edu/pdf/Stanford-MakovskyWebCredStudy2002prelim.pdf>

cww02

- Title "How Do People Evaluate a Web Site's Credibility? Results from a Large Study"
- Authors B.J. Fogg, Cathy Soohoo, David Danielson, Leslie Marable, Julianne Stanford and Ellen R. Tauber

Source Consumer Webwatch online publication

Online

http://www.consumerwebwatch.org/news/report3_credibilityresearch/sta nfordPTL_abstract.htm

unp

Unpublished research

Our lab has done research that is not published, such as student honors theses, class projects, and pilot studies. If we make this work public in the future, you'll find it at webcredibility.org.

we can prove it

• Make it easy to verify the accuracy of the information on your site.

You can build website credibility by providing third-party support (citations, references, source material) for information you present, especially if you link to this evidence. Even if people don't follow these links, you've shown confidence in your material.

Research support

- chi00, chi01a, ptl02, cww02, unp

we are real

• Show that there's a real organization behind your site.

Showing that your website is for a legitimate organization will boost the site's credibility. The easiest way to do this is by listing a physical address. Other features can also help, such as posting a photo of your offices or listing a membership with the local chamber of commerce.

Research support

- chi00, chi01a, chi01b, ptl02, unp, cww02

brainiacs "R" us

• Highlight the expertise in your organization and in the content and services you provide.

Do you have experts on your team? Are your contributors or service providers authorities? Be sure to give their credentials. Are you affiliated with a respected organization? Make that clear. Conversely, don't link to outside sites that are not credible. Your site becomes less credible by association.

Research support

- acm99, chi99, chi00, chi01a, chi01b, ptl02, cww02, unp

warm & fuzzy

 Show that honest and trustworthy people stand behind your site.

> The first part of this guideline is to show there are real people behind the site and in the organization. Next, find a way to convey their trustworthiness through images or text. For example, some websites post employee bios, including information about hobbies. This helps to humanize the individuals -- and the organization.

Research support

- chi99, chi01b, cww02, unp

we're accessible

• Make it easy to contact you.

A simple way to boost your site's credibility is by making your contact information clear: phone number, physical address, and email address.

Research support

- chi00, chi01a, ptl02, cww02, unp

small cost, big benefit

• Make your site easy to use -- and useful.

We're squeezing two guidelines into one here. The research shows that sites win credibility points by being both easy to use and useful. Some site operators forget about users when they cater to their own company's ego or try to show the dazzling things they can do with Web technology. Websites lose credibility whenever they make it hard for users to accomplish their task at hand.

Research support

- acm99, chi99, chi00, chi01a, ptl02, cww02, unp

freshly baked

• Update your site's content often (at least show it's been reviewed recently).

People assign more credibility to sites that show they have been recently updated or reviewed.

Research support

- chi00, chi01a, ptl02, cww02, unp

no sidetracks

• Use restraint with any promotional content (e.g., ads, offers).

If possible, avoid having ads on your site. If you must have ads, clearly distinguish the sponsored content from your own. Avoid pop-up ads; people hate them, and your site will lose credibility because you're distracting users from their task. As for writing style, try to be clear, direct, and sincere. Avoid a promotional tone.

Research support

- chi00, chi01a, chi01b, ptl02, cww02, unp

perfect polish

 Avoid errors of all types, no matter how small they seem.

Small errors like misspellings and broken links hurt a site's credibility more than most people imagine.

Research support

- acm99, chi99, chi00, chi01a, chi01b, ptl02, cww02, unp

art 1

Questions & Discussion on Part 2

"Introduction to Web Credibility"

Part 2 *"10 Guidelines for Designing Credible Websites"*

Part 3

"Insights from Web Credibility Research"

Part 4 "A Deeper Understanding of Web Credibility"

Overview of Module

Part 1

"Introduction to Web Credibility"

Part 2

"10 Guidelines for Designing Credible Websites"

Part 3 "Insights from Web Credibility Research"

Part 4 "A Deeper Understanding of Web Credibility"

Insights from Web Credibility Research

Guidelines are useful but they . . .

- are simplistic.
- don't apply in all cases.
- stop people from gaining a deeper understanding.

The research behind the guidelines:

- Stanford Web Credibility Surveys 1999, 2002
- Stanford MostCredible Studies 2002, 2003
- Note: There are other studies not covered here.
 - e.g., impact of photos, titles, typos, ads, specialty content

Stanford Web Credibility Surveys

- Overview of studies
 - Study conducted two times: 1999 and 2002
 - People evaluated the credibility impact of different website elements.
 - e.g., contact phone number, pop-up ad, etc.
 - Over 3,000 people participated from U.S. & Europe.

Much Less O

Much Less O

Much Less O

Believable -3

Much Less O

Believable -3

Much Less

Believable

Believable

Relievable

C

-3

26 The site is difficult to navigate.

Web Credibility Survey

What makes web sites believable?

Persuasive Technology Lab

Sample online questionnaire

0

0

0

C +1

C

+1

0

0

0

0

02

C

 \circ

0

+3

 \odot

23 The site makes it hard to distinguish ads from content.

9

24 The site offers information in more than one language.

0

0

C

-1

0

0

0

C

9

02

25 The site lists well-known corporate customers

27 The site is rarely updated with new content.

-2

- Responses represent "pure interpretation"
 - As opposed to contextualized interpretation (more on this in the next section)

	1999 Study (n=1409)	2002 Study (n=1649)
Age (mean)	32.6 years	35.5 years
Gender	56% male, 44% female	55% male, 45% female
Country	59% Finland, 41% U.S.	57% Finland, 33% U.S., 10% other
Education Level (median)	College graduate	College graduate
Income (median)	\$40,000-\$59,999	\$40,000-\$59,999
Years on the Internet (median)	4-5 years	> 5 years
Number of purchases online (median)	1-5 purchases	> 5 purchases
Number of hours spent online a week (mean)	13.5 hours	14.4 hours

Demographics of respondents

More about the Surveys

Instructions

Page 2 of 3

Much More

Believable

Much More

Believable

Much More

Believable

Much More

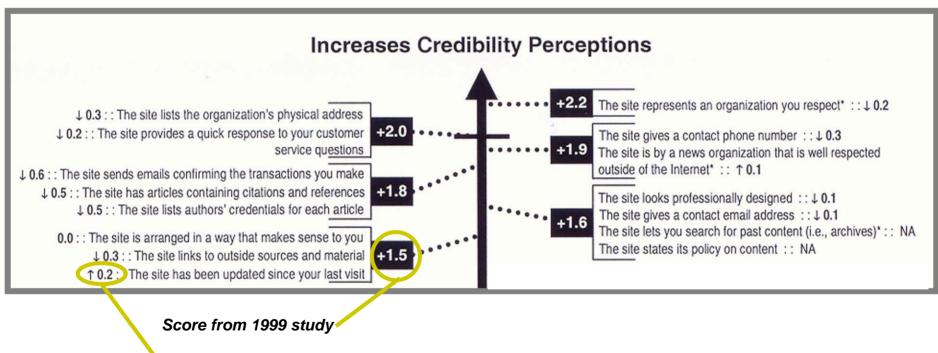
Believable

Much More

Believable

What boosts credibility most?

Overall results from 1999 & 2002 studies

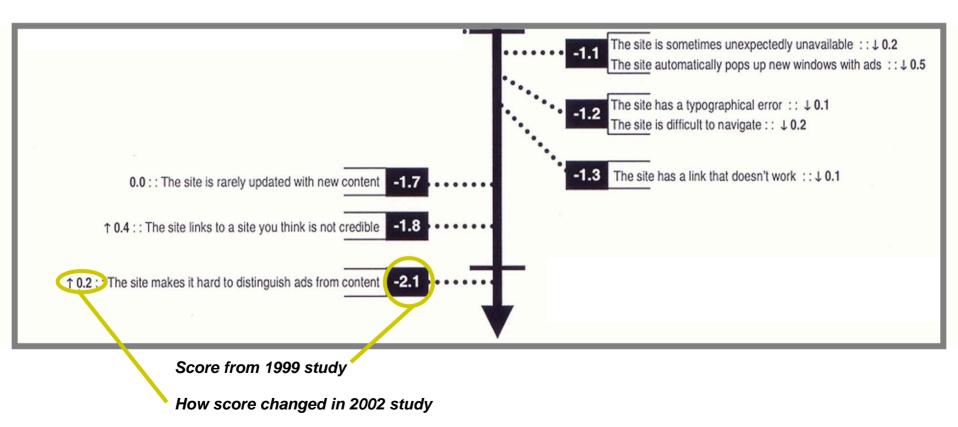


How score changed in 2002 study

#35

What hurts credibility most?

Overall results from 1999 & 2002 studies



What changed from '99 to '02?

In 2002 people were less impressed by:

- Nonprofit & .org
- Best practices (contact info, email confirmations)
- Awards
- Citations & credentials

In 2002 people were harsher on:

- Pop-up ads

Questions so far?

Next part: MostCredible Study

MostCredible Study -- 2002

Overview

- What websites are most credible and why?
- Done in collaboration with Consumers Union

Setting up the study

- Performed various pilot tests to find workable method
- Chose 10 content categories (health, news, etc.)
- Selected 10 websites per category (100 sites)

Who participated

- 2,684 people evaluated credibility of sites
 - Female: 58.1%, Male: 41.9%
 - Average age: 39.9
 - Average Web use: 19.6 hours/week
 - Residence: 47 states & 29 countries

What participants did:



Finance Web Sites

Please visit the Finance sites listed below, then come back to this page and rank them from most to least credible. In other words, look at the sites and decide which one has the most believable information.

Web Site	Credibility Ranking 1=more credible 2=less credible	Please share your comments
<u>Schwab</u> http://www.schwab.com	1 2 C C	×
ChoicePicks http://www.choicepicks.com	1 2 C C	×
Is there another Finance web site	you find credible?	http://
		Submit my rankings



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

Data Stanford collected

- Credibility ranking
- Comments on credibility
- Demographic variables

Results -- Analysis of all comments

Analyzed over 2600 comments and classified them

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%

Note that a comment could be classified in more than one category, such as a comment criticizing the visual design and doubting the accuracy of the information.

More results are available online.

Research Report

How Do People Evaluate a Web Site's Credibility?

- Written in simple prose, with many charts and tables.
- Published by Consumer WebWatch
- Available through www.webcredibility.org

Example: Health websites in study

Dr. Koop Dr. Weil Health Bulletin HealthWorld Online Intelihealth Mayo Clinic **MDChoice** NIH Oxygen.com Health WebMD

www.drkoop.com www.drweil.com www.healthbulletin.org www.healthy.net www.intelihealth.com www.mayohealth.org www.mdchoice.com www.nih.gov www.oxygen.com/health www.webMD.com

A health website with high credibility



What people said

"Addresses important issues"

"Lack of marketing copy makes it more credible"

"Laid out in a very matter-of-fact manner"

"Very professional looking"

"Gov affiliation makes it credible"

"Site owners don't have ulterior motives for presenting the information"

"The vocabulary seems to come from more of an expert"

"It looks like it's intended for doctors and researchers, not for everyday consumers of medical services -- this boosts its credibility."

A health website with low credibility



What people said

"I tried to find information from this website, but had trouble"

"Lack of the sources for the info presented"

"Too many ads"

"Online greeting cards don't seem very health-oriented"

"it seems like it is commercialized "

"Pop-health look and feel, like one of those covers at the Safeway magazine rack."

"Changing of url to thriveonline.oxygen.com makes me immediately think it's a sham"

"A lite health site"

Results -- Overall vs Health Sites

Topic of Credibility Comment	All Sites %	Health Sites %
Design Look	46.1	41.8
Information Design/Structure	28.5	28.3
Information Focus	<u>25.1</u>	<u>33.0</u>
Company Motive	15.5	17.8
Usefulness of Information	<u>14.8</u>	<u>20.5</u>
Accuracy of Information	14.3	18.7
Name Recognition & Reputation	14.1	10.9
Advertising	<u>13.8</u>	<u>21.3</u>
Bias of Information	11.6	14.8
Tone of the Writing	9.0	8.3
Identity of Site Sponsor	8.8	9.1
Functionality of Site	8.6	8.3
Customer Service	<u>6.4</u>	<u>0.4</u>
Past Experience with Site	4.6	2.1
Information Clarity	3.7	6.0
Performance on a Test	3.6	1.7
Readability	3.6	3.5
Affiliations	3.4	5.6

art 1

Questions & Discussion on Part 3

"Introduction to Web Credibility"

"10 Guidelines for Designing Credible Websites"

Part 3 *"Insights from Web Credibility Research"*

Part 4 "A Deeper Understanding of Web Credibility"

Overview of Module

Part 1

"Introduction to Web Credibility"

Part 2

"10 Guidelines for Designing Credible Websites"

Part 3

"Insights from Web Credibility Research"

Part 4 "A Deeper Understanding of Web Credibility"

A Deeper Understanding of Web Credibility

- 1. Prominence-Interpretation Theory
 - This theory describes how people assess the credibility of websites.
- 2. Fogg's Maxim for Credible Design
 - This phrase is the key to designing credible websites.
- 3. Four Types of Credibility
 - This framework outlines four ways that credibility can be won or lost.

4. Framework for Website Elements

• The framework can help designers understand which website elements are under their control when designing for credibility (and which elements are not).

Background for P-I Theory

To understand Prominence-Interpretation Theory . . .

Think back on the two types of studies:

- 1. Stanford Web Credibility Surveys 1999, 2002
- 2. Stanford MostCredible Study 2002

Both studies examined credibility, but they asked study participants to do different things.

Background for P-I Theory

What did these studies *really* investigate?

Stanford Web Credibility Surveys - 1999, 2002

- This research focused on the <u>abstract judgments</u> people made about website elements.
 - e.g., How much does having a privacy policy boost a site's credibility?
- That's interpretation.

Stanford MostCredible Study - 2002

- This research focused on the <u>things people noticed</u> when examining the credibility of real websites.
- That's prominence.

Note: There is some slippage. Neither is a perfect example of studying interpretation or prominence, but they are sufficiently close.

Prominence-Interpretation Theory

Two things happen when people assess the credibility of websites:

- 1. The user notices something (prominence).
- 2. The user 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 usually happens more than once when a person evaluates a website, with new aspects of the site being noticed and interpreted until the person reaches satisfaction with an overall credibility assessment or until the person reaches a constraint, such as running out of time.

Prominence

An element's likelihood of being noticed when people evaluate credibility.

Affected by involvement (motivation & ability), content, task, experience, individual differences & more.

X Interpretation

What value or meaning people assign to element, good or bad.

Affected by user's assumptions (culture, experience, & heuristics), skill, knowledge, & goals.

Credibility Impact

The impact that element has on credibility assessment.

#52

The key to designing for credibility

Fogg's Maxim for Credible Design

"To increase the credibility impact of a website, find what elements your target audience interprets most favorably and make those elements most prominent."

Questions so far?

Next part: Four types of credibility

Four Types of Credibility

- 1. Presumed Credibility
- 2. Reputed Credibility
- 3. Surface Credibility
- 4. Earned Credibility
 - It's helpful to distinguish different types of credibility.
 - But you won't find these distinctions in the psychology literature.

1. Presumed Credibility

• We believe because of general <u>assumptions</u> we hold.

#56

1. Presumed Credibility

• We believe because of general <u>assumptions</u> we hold.

Examples . . .

Increases	credibility

Domain name has ".org"

Info on the site is constantly updated

International brand name

Decreases credibility

Site has AOL domain name

Info on the site is rarely updated

Unknown brand name

2. Reputed credibility

• We believe because of a reference from a third party.

2. Reputed credibility

• We believe because of a reference from a third party.

Examples . . .

Increases credibility	Decreases credibility
Your medical doctor referred you to this Web site.	Your friend said the site was horrible.
The site won an award. An authoritative Web site linked to this site.	The newspaper said the site was down for three days. A political group you don't like endorses the site.

3. Surface credibility

• We believe because of what we find on simple <u>inspection</u>.

3. Surface credibility

• We believe because of what we find on <u>simple</u> <u>inspection</u>.

Examples . . .

Increases credibility	Decreases credibility
Site looks professional. Site is from an organization you recognize. You see that articles have citations.	Site looks confusing. The organization has no presence outside the Web. The site uses many animated features.

4. Earned credibility

• We believe because of <u>past experience</u> with site.

4. Earned credibility

• We believe because of past experience with site.

Examples . . .

Increases credibility

You get a quick response to a customer service question.

You can navigate the site easily.

You've found the content to be fair and balanced.

Decreases credibility

The site has a broken link.

The site takes a long time to download each page.

You've seen factual errors on the site.

Why this framework is helpful

- Provides a set of terms for discussion
- Enhances both research & design
 - Asking better questions
 - Seeing more possibilities

	<u>Presumed</u> Credibility	<u>Reputed</u> Credibility	<u>Surface</u> Credibility	<u>Earned</u> Credibility
Trustworthiness				
Expertise				

Questions so far?

Next part: Framework for Website Elements

Framework for Website Elements

Web Site Provider

- Person or organization that offers the site
 - » e.g., IBM, Kodak, Amazon

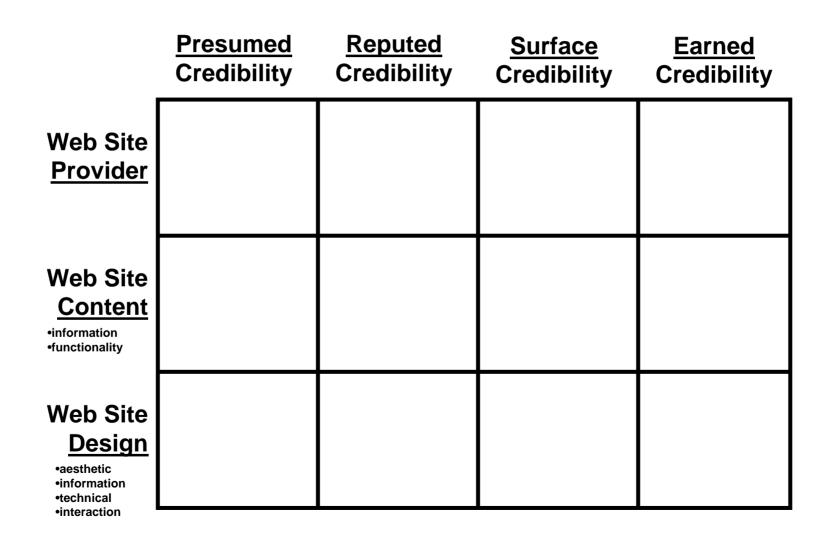
Web Site Content

- Information
- Functionality

Web Site Design

- Aesthetic design
- Information design
- Technical design
- Interaction design

Web Credibility Grid



Web Credibility Grid

Examples of elements that <u>increase</u> credibility*

	<u>Presumed</u> Credibility	<u>Reputed</u> Credibility	<u>Surface</u> Credibility	<u>Earned</u> Credibility
Web Site <u>Provider</u>	The provider is a nonprofit organization.	The provider is recognized as an expert by others.	Users are familiar with the provider outside of the Web context.	Users with questions receive quick and helpful answers.
Web Site <u>Content</u> •information •functionality	The site has ads from reputable companies.	The content has been approved by an outside agency.	The site appears to have lots of relevant information.	The site's content has always been accurate and unbiased.
Web Site Design •aesthetic •information •technical •interaction	The site was created by an outside design firm.	The site won an award for technical achievement.	The site has a pleasing visual design.	The site is easy to navigate.

*These are working hypotheses. To date, we've studied only some of these variables.

Web Credibility Grid

Examples of elements that <u>decrease</u> credibility*

	<u>Presumed</u> Credibility	<u>Reputed</u> Credibility	<u>Surface</u> Credibility	<u>Earned</u> Credibility
Web Site <u>Provider</u>	The site tries to recruit advertisers but has none so far.	The provider was sued for patent infringement and lost.	The site's URL does not match the provider's name.	The site doesn't give contact information anywhere.
Web Site <u>Content</u> •information •functionality	The site shows only a few hits on their web counter.	The content got bad reviews from an outside agency.	The site seems to have more ads than information.	The site has typographical errors.
Web Site <u>Design</u> •aesthetic •information •technical •interaction	The site has no security protocols for transactions.	The site is reported to have copied the design of another site.	The text font is either too large or small to read comfortably.	The site has links to pages that no longer exist.

*These are working hypotheses. To date, we've studied only some of these variables.

art 1

Questions & Discussion on Part 4

"Introduction to Web Credibility"

"10 Guidelines for Designing Credible Websites"

"Insights from Web Credibility Research"

Part 4 *"A Deeper Understanding of Web Credibility"*