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# Establishing Credibility in the Information Jungle: Blogs, Microblogs, and the CRAAP Test

Dawn Wichowski
*Salve Regina University*

Laura Kohl
*Bryant University*

# Online Credibility and Digital Ethos:

## Evaluating Computer-Mediated Communication

Moe Folk
*Kutztown University of Pennsylvania, USA*

Shawn Apostel
*Eastern Kentucky University, USA*

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# Chapter 13
# Establishing Credibility in the Information Jungle:
## Blogs, Microblogs, and the CRAAP Test

**Dawn Emsellem Wichowski**
*Salve Regina University, USA*

**Laura E. Kohl**
*Bryant University, USA*

## ABSTRACT

*In this chapter, the authors locate blogs and microblogs such as Facebook and Twitter in the information landscape. They explore their diverse habitats and features, as well as the explosion of uses discovered for them by academic and journalistic researchers. The authors describe an approach to evaluating the quality of blogs and microblogs as information sources using the CRAAP test, and they show how a consideration of digital ethos in the application of the CRAAP checklist imbues the test with flexibility and effectiveness, and promotes critical thinking throughout the evaluation process. The chapter demonstrates how the special features of blogs can be leveraged for rigorous assessment. For the purpose of defining examples, it focuses on blogs and microblogs such as Facebook and Twitter, but the authors see their approach as having application across other yet-to-be developed platforms because of its flexibility.*

## INTRODUCTION

In this chapter, we demonstrate that blogs and microblogs represent a significant source of information for researchers and contribute to scholarly and journalistic discourse. We show how blogs have characteristics that differentiate them from more traditional scholarly sources such as periodicals and monographs. We center the discussion around our assertion that expanding some of the criteria of the CRAAP test to encompass the concept of digital ethos makes the test applicable to social media applications like blogs. While some scholars argue that checklists like the CRAAP test are inappropriate and mechanistic evaluation tools, we refute this assessment, arguing that this checklist is a useful device especially for students new to research or scholars new to social media

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resources. We demonstrate how application of the CRAAP test can promote critical thinking. At the core of the chapter is the concept of digital ethos, which, as we apply it, contrasts with the model of authorship in traditional scholarly publications.

The concept of "digital ethos" plays a starring role in scholarship surrounding credibility on the Internet, whether in the fields of human-computer interaction, rhetoric, or information science (Flanagin & Metzger, 2007; Warnick, 2004; Fogg & Tseng, 1999; Enos & Borrowman, 2001; St. Amant, 2004; Marsh, 2006). "Digital ethos" diverges from traditional concepts of authorship in several significant ways. The credibility of authors of more traditional publications may be assessed by such measures as institutional affiliations, advanced degrees, and recognition in mainstream and scholarly press. The concept of digital ethos is more fluid. A blogger's true identity and affiliation may be unknown. A blogger may actively hide his/her true identity to make candid observations. Or a blogger may choose to highlight interests in a blog which stray from his/her professional specialization. In traditional evaluation frameworks, sources created by authors with these characteristics would be considered unreliable. However, we leverage the CRAAP test criteria to account for these differences in author ethos and evaluate the sources according to the more progressive concept of digital ethos. In more traditional scholarly sources, proper use of grammar and vocabulary is a significant indicator of credibility. In a blog, authentic use of slang and cultural-specific idiom may be a better indicator of credibility. We address these differences, and how the CRAAP test is well suited to address them.

Our perspective as librarians contributed to our choice of the CRAAP test as a foundational tool for assessing the quality and authority of social media sources. Our positive experiences in the classroom using the CRAAP test to help students navigate the open web made it an obvious choice, and further comparison with other evaluation approaches confirmed this choice for us. This tool has been accepted and used by information literacy professionals for other pedagogical reasons. The most obvious attribute is its name. As a mnemonic device, the CRAAP test is effective. Sharing this tool in the classroom, we are often met with amused laughter. As its creator, Blakeslee, of California State University, Chico pointed out, it is memorable and works contextually when instructing users about evaluating a wide variety of resources. "For every source of information we would now have a handy frame of reference to inquire, 'Is this CRAAP?'" (2004, p. 7). The test also incorporates all the widely accepted criteria for evaluating print and online resources.

## A CRAAP Test Overview

The CRAAP test consists of five overarching criteria for evaluation: currency, relevance, authority, accuracy and purpose. The application of checklists such as the CRAAP test are widely taught by professionals in the library and information literacy fields, particularly for evaluation of online resources,research papers, or other multistep academic projects (Doyle & Hammond, 2006; Blakeslee, 2004; Dinkelman 2010).

Throughout the information literacy literature there are multitudes of lists of evaluation criteria based on similar concepts (Kapoun, 1998; Blakeslee, 2004; Doyle & Hammond, 2006; Burkhardt et al., 2010). Doyle and Hammond (2006) summed up the criteria contained in most tests: "to decide whether something can be trusted, we need to consider who thought it up, who made it accessible, what are their motives and biases, and what features, if any, might reassure us that the influence of these motives and biases are minimized" (p. 58).

We see the CRAAP test criteria as the most concise, flexible, and memorable evaluation tool of the series of checklist tests that have been proposed since the late 1990s (Kapoun, 1998; Blakeslee, 2004; Doyle & Hammond, 2006; Burkhardt et al., 2010, Dinkelman 2010). The checklist format gives beginning researchers a simple way to understand the basic elements that lend a source credibility, while aiding seasoned researchers in developing an assessment schema for approaching new sources such as social media.

## The CRAAP Test Evaluation Criteria

### Currency: The Timeliness of the Information

- When was the information published or posted?
- Has the information been revised or updated?
- Does your topic require current information, or will older sources work as well?
- Are the links functional?

### Relevance: The Importance of the Information for Your Needs

- Does the information relate to your topic or answer your question?
- Who is the intended audience?
- Is the information at an appropriate level (i.e. not too elementary or advanced for your needs)?
- Have you looked at a variety of sources before determining this is one you will use?
- Would you be comfortable citing this source in your research paper?

### Authority: The Source of the Information

- Who is the author/publisher/source/sponsor?
- What are the author's credentials or organizational affiliations?
- Is the author qualified to write on the topic?
- Is there contact information, such as a publisher or email address?
- Does the URL reveal anything about the author or source? examples: .com .edu .gov .org .net

### Accuracy: The Reliability, Truthfulness, and Correctness of the Content

- Where does the information come from?
- Is the information supported by evidence?
- Has the information been reviewed or refereed?
- Can you verify any of the information in another source or from personal knowledge?
- Does the language or tone seem unbiased and free of emotion?
- Are there spelling, grammar or typographical errors?

### Purpose: The Reason the Information Exists

- What is the purpose of the information? Is it to inform, teach, sell, entertain or persuade?
- Do the authors/sponsors make their intentions or purpose clear?
- Is the information fact, opinion or propaganda?
- Does the point of view appear objective and impartial?
- Are there political, ideological, cultural, religious, institutional or personal biases?

*(Meriam Library, California State University Chico, 2010).*

## Issue of Ethos, Authority, and Credibility in Social Media

Social media as an information format is closely tied to the identity of its creator. The value of blogs as information sources is related to this personal orientation, but it follows that the intelligent use of the blog hinges on an accurate assessment of the blogger's authority. Though the phrase "digital ethos" could be defined as the overall spirit of an Internet community, we use the phrase "digital ethos" to encompass the characteristics that compose a blogger's online identity. Digital ethos can be investigated to evaluate a blogger's authority to purvey information and express opinion and the CRAAP test can help in that investigation.

Some define ethos *as* credibility (St. Amant, 2004, p. 318; Enos & Borrowman, 2001, p. 93), but we subscribe to the more neutral definition, of ethos as tied to a blogger's character, as well as the blogger's audience perception of his/her character (Brahnam, 2009, p. 10). Aligning with Aristotle's depiction, a *credible ethos* arises from a blogger's persuasive mastery (Marsh, 2006, p. 338-339) A blogger's *authority* to opine on a subject is tied to his or her credibility. In their 1999 paper defining the place of credibility in human computer interaction, Fogg and Tseng defined credibility as "believability." Fogg and Tseng emphasized that credibility is not innate, but relies on an audience's subjective assessment (p. 80). Authority relies on audience assessment, but connotes something stronger than believability; authority implies an ethos infused with experience and wisdom (Reynolds, 1993, p. 327; Segal and Richardson, 2003, p. 138). An authoritative blogger ethos can also be enhanced by audience perceptions of a subject's reputation, as judged by affiliations and comments about the blogger's work. Thus, assessment of a blogger's digital ethos to determine credibility and authority is a highly subjective process. We believe that the CRAAP test's criteria provides the most effective and concise way to consider the variables that contribute to a credible digital ethos.

Authority can be based on observed persuasive skill over time, as seen from the blogger's chronological posts and his or her trail of activity as evidenced by comments on other blogs or online forums. Authority is a key measure of blog quality, and is also measured in the accuracy and purpose elements of the CRAAP test. A thorough analysis of overall blogger ethos is achieved by employing all the criteria of the CRAAP test.

## Applying the CRAAP Test to Blogs

In this section, we lay out our approach to evaluating blogs using the CRAAP test, with an emphasis on blogger ethos. As librarians, our approach to blog evaluation is grounded in the skill-set conveyed in the concept of "information literacy" or "the set of skills needed to find, retrieve, analyze, and use information" (Association of College and Research Libraries, 2012). In customizing the CRAAP test for use in social media applications such as blogs, we include under the umbrella concept of information literacy other literacies, such as media, technological and digital literacy. Though this chapter is not the first to use the CRAAP Test to evaluate blogs, we believe that our integration of the concept of digital ethos within the criteria of the CRAAP test, as well as a systematic utilization of the characteristics specific to blogs in the application of the CRAAP test's evaluative elements is original and effectively tailors the CRAAP test for use with blogs and other social media sources.

## Currency

Assessment of the currency criteria in blogs is intuitive. A key feature of blogs is their chronological nature, in which posts are displayed in reverse chronological order. Dates and times are automatically time stamped on posts, easily reviewed by a user. This feature also allows the user to quickly determine if the blog is being maintained or is in disuse. The comments feature in blogs also includes timestamps, allowing the researcher to chart the flow of commenter reactions. By convention, blogs indicate at the top or bottom of a post if there have been any updates to the original writing. Researchers can easily determine the dates of posts and establish their currency. This also facilitates historical research by following commentary surrounding major events or the evolution of scholarly thought on a topic, for example.

In the case of audio or video, currency may be more difficult to establish. When media is embedded into a blog, researchers can use Meola's corroboration and comparison approach, in which they attempt to locate the original source of the media (2004, p. 331) to see it in its original context, with its original timestamp. Visual clues in embedded video or photographs, such as clothing style, and audio clues, such as figures of speech or music, can also be helpful for estimating currency.

## Relevance

Beyond the initial question, whether information included in the blog or microblog answers the researcher's information need, researchers can determine relevance by assessing the blog's intended audience. In some cases, a blog may be embedded in a website that implies its subject focus, and therefore, relevance. In other cases, the blogger is clear about their intended audience. For example, the blog "I Blame the Patriarchy" (http://blog.iblamethepatriarchy.com/) includes this text on its homepage: "I Blame the Patriarchy is intended for advanced patriarchy-blamers. It is not a feminist primer." In the absence of such a clear statement, linguistic cues can provide indicators about a blogger's digital ethos and intended audience, and be reviewed to test relevance. Is the blogger using simple, clear wording to introduce a topic to people new to the subject or using complex speech and linguistic shortcuts to speak to peers? Technical jargon or obscure slang connotes that the blogger is an expert and has an intended audience of experts. More conventional language implies that the blog is aimed at a general audience. In the case of podcasts, Austria (2007) found that podcast listeners were able to judge the level of information through several factors, noting in particular the presence or absence of jargon during an interview with a scholar. When language was free of jargon the listeners were able to surmise that the intended audience was more general. Relevance may also be closely related to the evaluation of authority and accuracy, discussed below.

## Authority

Contributing to both the value and risk of blogs as information sources is their "low barrier to entry," in which it is free and easy for anyone to set up shop with a broad variety of social media accounts (Metzger, 2007, p. 2078). This has implications for our suggested evaluation of bloggers' digital ethos. The conception of "identity" on the Internet is fluid, and while this can be acceptable, it is incumbent upon the researcher to determine the authority and purpose of the blogger as well as the accuracy of the information the blogger provides. We believe that this low barrier to entry, while making careful evaluation of a blogger's ethos essential, is also the medium's strongest asset, as it gives a stage to previously unheard voices.

Several authors argue convincingly that authority is elevated in importance above other criteria for evaluation. Fritch and Cromwell (2001) considered "cognitive authority," defined as "authorship and affiliation," to be the most significant criteria for evaluation. In order to conduct an effective assessment, researchers will find it essential to understand the *spirit* of the criterion, "authority." Of the five criteria of the CRAAP test, authority is most obviously tied to the blogger's digital ethos (Enos and Borrowman, 2004, p. 95-96). By "spirit" we mean that authority can be determined not through a series of set questions, but by understanding the qualities that would lend credibility to a blogger's ethos, and having at one's disposal a series of strategies to choose from based on the type of research and the subject matter of the blog.

To determine if a blogger's ethos is credible, users can evaluate language, scope of the information presented, and accuracy of the information presented for *trustworthiness* and *expertise*. Fogg and Tseng (1999) defined trustworthiness as "well-intentioned, truthful, [and] unbiased" (evidence of bias should be identified, but it needn't invalidate a source's appropriateness for research; the existence of bias in sources will be addressed in the "accuracy" criterion). They defined expertise as "knowledgeable, experienced, [and] competent" to describe the worthiness of the source (p. 80). These qualities can be established by evaluating the accuracy of the blogger's statements (described below in the "accuracy" criterion), or by examining a blogger's affiliation.

Affiliation can yield important clues about authority. Though a clear determination of the true identity of a blogger can prove difficult, affiliation can be established with other evaluative techniques specific to blogs. For example, blogs often include a "blogroll," or list of other recommended blogs. Microblogs include links to the blogger's friends and associated groups. Researchers can check these for clues about the author's cultural and political persuasion, and also for what types of information sources the author considers valuable. This leads to more questions, which may yield information about the blogger's digital ethos. Is the blogger affiliated with groups that show evidence of strong political opinions? Do the groups or friends seem to express rational thought or reactionary views? Do the blogger's friends or blog roll give clues about whether the blogger is knowledgeable of others who are key in their area of interest? Blogs also often include links to photos and video. If the photo or video includes links to other sources, researchers can follow these to determine if they link to reputable sources for the blogger's field of interest. To evaluate authority in vlogs (video blogs) or podcasts, users can direct their attention to the vocabulary, language, and temperament of participants. Austria (2007) asserted that for the purpose of evaluation, the interviewee can be considered the "author" of the content and the host can be seen as the "publisher." Vlogs and video podcasts can also be analyzed using visual information beyond the text (emotional cues to measure bias, evidence of the vlogger's affiliations based on surroundings and visible possessions, etc).

To get an idea of the blogger's reputation and standing with his/her audience, the "comments" feature of blogs can be seen as a form of peer review, in which readers offer critiques and corrections (Banning & Sweetster, 2007). Comments also add value to information within the blog by providing an opportunity for users to offer opinions, personal experiences, and other perspectives that give the reader a fuller picture of the issue than the initial blog post.

To establish the extent of a blogger's expertise, answering the question, "Is the blogger qualified to opine on this subject?" the researcher can assess the blogger's use of language, either written or oral (through video or audio). It is not necessary that the blogger use the language of journalism or academe to be considered credible. Much depends on the type of information the researcher is looking for when evaluating authenticity. If a blogger is speaking about being a gang member, does s/he use the slang and phrasing that would be consistent with the vocabulary of a person from his/her region and affiliation? Maybe the course of research has taken the scholar into the computer programming community. Does the programmer appropriately use programmer slang or technical terms? Do people commenting on the blog post seem to respect him/her? With social media research these considerations can be investigated over time by reading through archives of posts. Coming from an oral tradition, Quintilian asserted that an insincere speaker would reveal him/herself through a continuously developing relationship with the audience (qtd. In Enos & Borrowman, p. 96). Today, an Internet user leaves a trail of activity, often linked across multiple social media platforms, through which a researcher can see the development of the blogger's thought, his/

her relationships with the audience, and scope of knowledge.

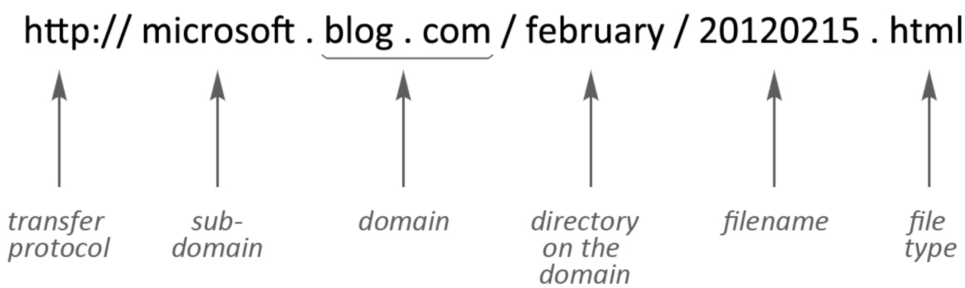
There are cultural considerations to consider when assessing authority, especially related to the blogger's expertise. Kirk St. Amant wrote that different cultures use different standards to assess credibility. St. Amant (2004) referred to the elements each culture uses to assign credibility as the "ethos conditions" (p. 319). He cited multiple examples, including the writing styles preferred by authors of Japanese or American business memos. Americans prefer concise, direct explanations, while Japanese feel that stating obvious information is rude (p. 320). He also cited differences in writing structure (for example, southern Europeans see long sentences as evidence of a credible presenter ethos), different assignations of credibility based on the use of humor, and different ways of presenting intelligence (p. 320-325). Thus, audiences from disparate cultural backgrounds may come to divergent conclusions when evaluating a blog using the authority criterion of the CRAAP test. This cultural subjectivity can be mitigated while the researcher considers whether the blogger is writing to an audience that does not come from the researcher's cultural background. If so, it is incumbent upon the researcher to understand the cultural mores of that audience in order to accurately assess credibility.

Another cultural concern is addressed by Alvarez-Torres, Mishra, and Zhao, who found that study participants assigned more credibility to native speakers than to fluent foreign speakers, regardless of actual content (2001). These findings could have implications for researchers evaluating blogs created by bloggers for an audience of a different cultural background. Researchers may be well-advised to keep this in mind while evaluating text, video, and audio components of blogs, in keeping with Barzun and Graff's suggestion that researchers nurture the virtue of self-awareness (1992, p.99).

If a blog post clearly lists a creator, authorship (which aids in getting a fuller picture of a blogger's digital ethos) can be confirmed several ways. If the blogger states his/her name, a web search may provide an idea of any traditional credentials and affiliations. Authority or affiliation can also be confirmed in more technical ways. A Whois.com search allows a researcher to simply type in a domain name and view information on the owner of the domain. This can clarify whether a blog is actually owned by a company or is a product of an individual or organization. Additionally, dissecting the domain address can provide clues as to authorship or ownership. The suffix, or top-level domain of the site's URL (.uk, .ae, .fr, .ly, .edu, .gov, mil, .com) can sometimes provide a general idea of affiliation. Sites ending in .fr, for example, are hosted by companies in France. Sites ending in .ly are hosted by Libyan companies. Other suffixes are specific to the type of institution that hosts them. For example, .edu is only provided to accredited post-secondary educational institutions in the United States. Suffixes ending in .gov are assigned only to United States government websites.

The rest of the URL can also provide clues about a blogger's ethos. For example, http://blog.microsoft.com is very different from http://microsoft.blog.com. The first part of the URL http://blog.microsoft.com (http://) references the protocol, or how the page gets to the user and how it functions. The last part of this URL (microsoft.com) is the domain. This is the host site. The second portion of this URL (blog) is the subdomain. This represents a section on the host site. In the case of the URL http://microsoft.blog.com/february/20120215.html, one can quickly deduce that it is either a site unaffiliated with Microsoft that is blogging about Microsoft, or it is a site attempting to trick users into thinking it is affiliated with Microsoft, possibly, for nefarious purposes. /20120215 is a file name. We can deduce that it is a file because of the .html extension. The .html

*Figure 1. Parts of a URL*




extension tells us that the file is a webpage. If the extension were .doc, we would know that it was a Microsoft Word document. If the extension were .exe, we would know that the file was a program, and would download to our computer if we stayed on the page. /february refers to a directory, like a folder on your computer, in which 20120215.html is housed.

Warnick (2004) asserted that the use of authority is an outdated evaluation criterion in an information landscape where many websites are "authorless" (the actual author cannot be verified). We assert that blogs, as often highly personal modes of online publishing, have a singular preoccupation with authorship if defined more flexibly. The concept of digital ethos in a blog environment may not be compatible with past ideas of an author's ethos. Bloggers may not leave their real names. They may not provide a physical address and may construct identities separate from their physical, real world identities. This may be insignificant though, if their online identity reflects a true aspect of themselves and their expertise in their field of interest is authentic. The strategies for verifying authority detailed above provide an alternative to traditional measures of authority (such as academic credentials and institutional affiliations) in an alternate information landscape.

## Accuracy

Accuracy is a crucial element in assessing blogger ethos. The term "blog" is understood to infer subjectivity, immediacy, and less stringent editorial controls (Johnson & Kaye, 2004; Berkman, 2004). The information within the blog is more likely than a major media source to have inaccuracies and errors. Bloggers have varying degrees of concern with their reputation, and therefore may not be as motivated to double-check the information they place online. This is in contrast to a news corporation, which is bound by ethical and professional standards of conduct for journalists and accordingly has incentive to ensure that information it releases is correct (Chung, et al., 2012; Johnson & Kay, 2004). With this in mind, however, researchers can rigorously use evaluation methods imbued with the spirit of the accuracy criteria, including comparison and corroboration and following information to its original context, to judge the reliability of the blog as a source.

Meola's (2004) "contextual approach" to evaluating web resources focused on using comparison and corroboration. This approach fits in nicely with several criteria of the CRAAP test, and is just one example of how the test can lead to higher-order thinking when it is applied to the digital ethos of the online environment. Ideally, a blogger will develop a trustworthy ethos by linking to the original source of the posted information. If s/he doesn't, however, a researcher may look for other sources to corroborate a fact, especially respected or mainstream sources. This is also referred to as verification. In the (1992) *Modern Researcher*, Jacques Barzun and Henry Graff devoted an entire chapter to the importance of verification in research. In the case of blogs, this approach can include following the trail of hypertext links to the original source in order to read and analyze the text in its original context. It can include reading cited sources to confirm that they make the points the author says they do. It can mean double-checking that the story is independently reported in respected news sources. Or, it can even mean contacting the blogger to ask further questions. In certain types of sources, proper use of grammar, vocabulary and punctuation may also give a picture of a blogger's accuracy, and by extension, authority. This issue can become obscured, however, when a blog is not written in the author's home language. Investigation into the author's background may yield clues as to whether they are writing in their native language, which will aid in verification.

The results of not verifying facts in their original context and corroborating them in other news sources can be embarrassing. Viral reposting of satirical news stories on blogs has become so pervasive that a blog, Literally Unbelievable (http://literallyunbelievable.org), was created to chronicle them. Mainstream news sources, such as the Beijing Evening News, which reprinted the story, "Congress Threatens To Leave D.C. Unless New Capitol Is Built" originally from the *The Onion*, have also been humiliated by poor corroboration of facts (Terdiman, 2004).

Throughout the verification process, Barzun and Graff emphasized the importance of skepticism and awareness of how one's personal bias may influence assessment of information quality. Metzger et al. (2010) found that Internet users tend to find sources more credible if they confirm already existing viewpoints. This "bias confirmation effect" is noted in multiple sources, including by Barzun and Graff (1992) in *The Modern Researcher*: "In research as in life one is far more likely to find what one looks for than what one does not care about" (p. 186). This prejudice can create a predisposition to give a source the benefit of the doubt if it agrees with one's own assertions, or to dismiss a source because it disagrees (Barzun and Graff, 1992, p. 99). Researchers should be aware that their personal opinions may predispose them to be overly critical of information that rebuts their beliefs, and less critical of information that confirms them.

As researchers develop background knowledge of a subject, they can more easily identify information that "doesn't feel right" and should be verified. Barzun and Graff (1992) asserted that successful assessment of a source's accuracy relies heavily on "common sense reasoning, a developed 'feel' for history and chronology, on familiarity with human behavior, and on ever-enlarging stores of information" (p. 99). This intuition is developed over time with exposure to many sources, both traditional and non-traditional.

## Purpose

Since the existence of bias may provide important evidence when compiling an accurate picture of a blogger's digital ethos, researchers should consider the reasons a blogger created a blog or post. An "about me" section can provide explicit (though not always completely accurate) information about purpose. Other clues to the purpose, or creator intent, of blogs may be revealed by reader comments and interactions with each other and the blogger. Information about blog purpose may also be revealed through assessment of the kind of advertising on the site. Advertising may be overt, with ads hosted by the blog around the perimeter of a page, or may be more subtle, with posts extolling a particular product or political figure in text or video messages.

Emotional tone and biased or strong language may also give clues to purpose and by extension, the blogger's digital ethos. Bias may also be revealed through the links, photos and videos that the author has included in their post. As addressed earlier, persuasive language or evidence of a biased perspective does not give cause for immediate dismissal of a blog as an unreliable source.

Depending on the topic of research, evidence of strong opinions may make a source more useful.

In terms of evaluating bias, the researcher should vigilantly maintain self-awareness. Banning and Sweetster (2007) explored the "third person effect", or the tendency for people to think that others are more likely to be influenced by media than they themselves are. According to the study, the individual Internet user is likely to believe s/he alone is immune to the wiles of media and advertising, while the rest of the population is more likely to fall prey to such persuasion. The researchers focused on the habits of blog users in particular and found that there were no differences in third person effect when comparing media types (personal blogs, news blogs, online corporate news sources, and newspapers). Though Banning and Sweetster were surprised by the results and urged further study, this could imply that researchers finding information through blogs are susceptible to inflated views of their evaluation abilities.

Meola's (2004) comparison method of source evaluation can also be useful in assessment of purpose. Meola suggests that researchers locate disparate sources (for our purposes, these might include blogs and scholarly or mainstream news sources) with similar subject coverage and compare them. This can reveal bias (as will one-sided coverage of an issue), thoroughness (if the author only discusses economic, as opposed to social implications of a policy, for example) and accuracy.

## Blogs and Microblogs as Scholarly and Journalistic Sources

Blogs and microblogs have begun to be recognized as significant sources of scholarly inquiry. In this section, we briefly define blogs and demonstrate how blogs are being utilized in research. A blog (weblog) is technically defined as a series of "frequently modified web pages in which dated entries are listed in reverse chronological sequence." The use of blogs became widespread in mid-1999 and their popularity exploded in the mid-2000s (Herring et al., 2004, p. 1). As of 2008, 33% of Internet users reported that they regularly read blogs, and 12% reported having created a blog, while .5% of Internet users blogged regularly (Smith, 2008).

Microblogs are shorter, often restrict word count in posts, and broadcast updates to other users who choose to subscribe. Platforms include Facebook, Twitter, and Tumblr. Microblogs represent a revolution in social and political communication. As of February 2012, Facebook had 845 million total users (Swift, 2012) and Twitter had 100 million active users with an average of 230 million tweets per day (McMillan, 2011). Hereafter, we will group microblogs under the general heading "blogs," because all of the features, habitats, and uses of blogs described throughout this chapter may also exist for microblogs.

Users choose to follow blogs for news, gossip, editorial opinion, scholarly argument, and personal narrative. In terms of habitat, blogs may be embedded in credible news websites such as those for the *New York Times* and the BBC, freestanding (with their own domain address) or found as a part of a subscription service such as Wordpress. Blogs may incorporate media, such as text, images, video, audio, and hyperlinks to other content. Blogs may include features such as comments by readers, a blogroll (a linked list of recommended blogs), an "about the author page," and a deep history of past writing.

## Types and Research Utility of Blogs

Personal narrative blogs represent a significant source of primary, first person information. They may provide unmediated accounts of historical events or "snapshot in time" information. Social scientists and journalists may find personal narrative blogs especially useful because they often provide primary, first person accounts, written and published by the subject which do not pass through the disfiguring lens of an observer or interviewer. These blogs allow researchers and journalists to identify sources who speak at length in their own words, and bring perspectives that might ordinarily be lost or unavailable. Examples include the blog "Baghdad Burning" (http://riverbendblog.blogspot.com/), which represents, as Miriam Cooke detailed in her 2007 article, a platform for civilians trapped by war to reach a global audience while chronicling the details of their daily lives. In the past, the only way such accounts were available was through state-sanctioned and published books or through the eyes of journalists who interviewed people on the ground.

Advertising blogs are created by companies to discuss new products or services and predominately serve as marketing. They represent a source for cultural and historical research related to their host company. This genre has some crossover with the personal narrative genre, as popular bloggers may be paid by advertisers to promote their products. An example of this crossover in purpose is Sony's blog (http://blog.sony.com/), which featured the well known photographer and blogger Ma Ra Koh as a guest blogger.

News blogs take several forms, and each may fill different information needs. An embedded news blog is housed in a traditional news source such as the *Wall Street Journal* or CNN.com. Blogs of this type can be followed for breaking news by staff journalists, or opinions by members of the news organization's editorial staff. Freestanding news blogs, unaffiliated with major news organizations, may aggregate news from a particular beat, cultural or political orientation; conduct original investigations; mine sources to break; provide opinion; or some combination of the above. These blogs have become significant social and political forces in the information landscape. Bloggers, such as Josh Marshall, of "Talking Points Memo" (http://talkingpointsmemo.com/), have broken stories that mainstream news sources disregarded, such as racist statements made by Senate Majority Leader Trent Lott, which resulted in his resignation (Johnson & Kaye, 2004; Marshall, 2002).

News blogs in various permutations can be significant information gathering, dissemination, and story refining tools for journalists and academic researchers. The defining characteristic of all social media news applications, interactivity, encourages more active consumption of information. A blog post about a story may provoke a series of comments and exchanges among those commenting. Reading the story and the associated comments can provide a more complete picture of the issue than the original post alone. Related opinions, personal experiences, and clarifications in the comments can situate the post more clearly for the reader (Chung et al., 2012; Notess, 2010). For example, the *Providence Journal*'s blog coverage of a teen atheist suing to remove a prayer banner from her public high school in Cranston, RI garnered many comments. These comments illustrate the atmosphere of religious controversy in the community where the teen lives, which is not entirely clear from the news blog posting alone (Arditi, 2012). Blog comments by citizen journalists also provide story leads and enrich content, and they have been formalized into discrete news sections by corporate media sources. The *Washington Post*, BBC, and CNN, for example, solicit news, photos and videos from members of the public (Notess, 2010).

Blogs can be a format for journalists to post stories that do not fit in the more formal portions of their publication (Bradshaw, 2008). Examples of this type of blog include the "City Room" blog of *The New York Times* online (http://cityroom.blogs.nytimes.com). Journalists have also established blogs to do more in-depth reporting on a particular beat and have influenced the mainstream media establishment in doing so. An example of this is La Silla Vacía, an investigative journalism blog in Colombia, in which several reporters choose from among of the country's most significant political issues and cover those topics in-depth (Leon, 2010). Blogs may augment their presentation of a story using media formats such as photos, videos, audio, and hyperlinks. This can provide a more complete picture of a story and gives users an opportunity to evaluate the journalist's conclusions themselves (Chung et al., 2012).

Irrespective of subject matter, microblogs such as Twitter and Facebook can play a momentous role in news dissemination. In their working paper "Opening Closed Regimes: What Was the Role of Social Media During the Arab Spring?" Howard and his fellow researchers found, in analyzing the volume, hashtags (folksonomic categorizations, preceded by the "#" sign), and originating location of Tweets over time during the Arab Spring, that a "spike in online revolutionary conversations preceded major events on the ground" (Howard et al., 2011, p. 3). The researchers also tracked the spread of revolutionary topics by hashtag across borders, and noted that protesters in different countries were communicating with one another, spreading news from the ground and also from respected international media outlets (Howard et al., 2011). From this example, it is clear that social media applications like blogs can affect the trajectory of news events, serve as an archive of the events themselves, and can be the subject of study on multiple levels.

Knowledge blogs represent a significant new influence on the scholarly information cycle. Features endemic to blogs facilitate scholarly communication, primarily, their interactive components. Knowledge blogs are publicly accessible; they make new ideas, theories and research available to viewers from outside the creator's discipline and outside of the scholarly community. This opens the floor to unexpected discussions and new conclusions (Kjellberg, 2009). Beyond expanding the base of interested parties, blogs can serve several other purposes in their expansion of scholarly discussion among the various epistemic cultures (defined, in Kjellberg's 2009 article, as differences among scholarly communities in the areas of research practice, knowledge creation, and social characteristics). Kjellberg discussed Luzon's observations of "strategic linking" among scholars to provoke and engage in "hypertext conversations" (p. 3), which can deepen existing relationships and create new ones. Blogs may also provide context to findings by describing research in practice, and may speed the evolution of ideas by allowing other scholars to build on research that is not completed but is still in process. In this way a blog can be a form of gray literature, allowing researchers to present early results for the express purpose of soliciting feedback (a feature of blogs also significant for journalists, as described by Bradshaw in his 2008 article).

## FINDING AND CHOOSING BLOGS

Researchers selecting blogs can use a series of steps similar to the decision-making process for choosing more conventional sources. As Jacques Barzun and Henry Graff suggest, "the researcher must again and again *imagine* the kind of source he would like before he can find it" (1992, p. 47). The process of *articulating the information need* is valuable. It helps to define and clarify the research question, and leads to a consideration of the strengths and weaknesses of the sources at a researcher's disposal. An encyclopedia, for example, will provide an excellent overview of a topic, but is a poor source for in-depth analysis. A research article is a good type of source for in-depth analysis, but one would have to read many articles to begin to see the bird's eye view of a topic.

As a source, a blog post may fulfill any of these needs, ranging from in-depth analysis to overview to breaking news. In making the decision of how to choose a blog as a source, a researcher may also consider which type of blog, among the genres discussed above, would fill their information need. For example, if they are interested in following the evolution of conservative opinion on a topic, they may choose to follow the embedded blog of a conservative newspaper columnist, or a well-respected freestanding news blog whose writers have a conservative slant. They might also follow the knowledge blog of a conservative thinker.

There are several technical approaches to finding blogs. Blogs are sometimes cited and linked to from other news stories or social networking profiles. A politician, scholar, journalist, or other public figure's blog is often listed on their Facebook, or Twitter profile, or on the homepage of their place of work or personal home page. Researchers can also use such finding tools as http://technorati.com/, http://www.google.com/blogsearch, the search functions on such major blog platforms as http://wordpress.com/, or microblog platforms http://twitter.com/ or http://www.facebook.com/. Another way to find blogs is by using the "Search within a site or domain" option within Google's advanced search page. For example, from the advanced search page, entering youtube.com in the "Search within a site or domain" search box will bring up results for your search terms only within YouTube's domain. To keep up with the latest posts or receive posts on a particular topic, a researcher can add blog RSS feeds to their RSS readers. RSS (or Real Simple Syndication readers), such as Google Reader, provide notification of new blog posts as an alternative to regularly checking the blog.

## Concerns about Blogs as Information Sources

Brabazon, in her 2006 article, "The Google Effect: Googling, Blogging, Wikis and the Flattening of Expertise," provided a biting indictment of the use of social networking applications in scholarly research. She stated that "'peer production,' … is really peer-less production, where mediocre, banal and often irrelevant facts are given an emphasis and interpretation which extends beyond the credibility of scholarly literature" (p. 157). This condemnation deserves consideration in relation to how researchers *use* social networking applications such as blogs, though we of course strongly disagree with any characterization that discounts them as endemically invalid sources. We believe that Brabazon is taking a limited view of social media applications in her disparagement. The wide range of subject matter, purpose, and authorship of blogs and bloggers described above, as well as the wide variety of research uses they have already been mined for, is evidence of their value as research sources.

That said, without careful selection, assiduous evaluation, and judicious use of blogs as sources, researchers may find themselves in embarrassing situations. In this section, we describe some of the dangers inherent in blog research, in the belief that an informed researcher is a skeptical researcher. Seemingly factual information may be inaccurate. Authors may not be who they say they are. There are myriad instances of elaborate blog hoaxes; so many, in fact, that a word was coined for these fake blogs: "flog" (Weaver, 2006). There are various categories of flogs. Examples span the spectrum from marketing attempts by major corporations to first-person narrative blogging.

Attempts by major corporations to sew grassroots excitement about their brands are known as "astroturfing." The bloggers "Charlie and Jeremy," for example, were ostensibly two young men who wanted their parents to buy them a Sony PlayStation Portable game console for Christmas and supposedly created "All I want for Xmas is a PSP." However, a domain ownership search revealed that the domain name was registered to Sony's Zipatoni marketing company (Consumerist, 2006). The blog "Walmarting Across America" was created by real people, "Jim and Laura", who traveled across the country in an RV visiting Walmart stores; however, evaluation of the subject matter and the tone of interviews of Walmart employees (described in a businessweek.com article as "relentlessly upbeat") raised questions about bias. Interviews with Jim and Laura revealed that, from the RV to the travel funds, the trip was bankrolled by an advocacy group created by Walmart's public relations firm and funded by Walmart (Gogoi, 2006). In each of these cases, careful assessment of the blogs, using approaches that are also described in the CRAAP test, revealed the hoax.

There are also examples of false identity flogs in the personal narrative genre. The blog "A Gay Girl in Damascus'" garnered a significant and devoted following and was used by journalists to report on events in Syria. Purported author Amina Arraf, a lesbian Syrian-American, was later found to be a 40-year-old American man (Mackey, 2011). This hoax was uncovered by Andy Carvin of National Public Radio, who chronicled the evolution of his opinion on Storify (2012). Carvin detailed the evolution of his suspicions on his social networking account on Storify, and his post provides a fascinating detail of how evaluation techniques described in the CRAAP test can lead to an accurate assessment of blogger ethos. Carvin began to question the true identity of Arraf after he broadcasted a request on Twitter for people who had met Arraf to contact him, and was unable to find anyone who had met her in person. On Storify, Carvin displayed email interviews with multiple skeptical blog readers and contacts in Syria. He showed how blog readers compared pictures purported to be of Amina Arraf, raising questions whether they were of the same person. Blog readers also made a close assessment of the accuracy of Arraf's blog posts:

*I can tell you from experience that the post titled my father the hero doesn't make sense whatsoever. They [the secret police] either ask you to come over… yourself to have a chat (usually friendly) or arrest her no matter who her father is. It's as simple as that. (Carvin, 2012)*

He also examined the blog's accuracy and purpose by following Arraf's trail of past posts back to an older blog where she explicitly stated that she would be publishing fiction and nonfiction without specifying which was which. Carvin's assessment approach shows how successful utilization of CRAAP criteria can establish an accurate view of the blogger's digital ethos. He attempted to corroborate the authenticity of the blogger's identity by finding people who had met her in person and by analyzing media embedded in the blog. He compared the accuracy of facts put forth in the blog against those of knowledgeable sources. He used approaches applied in the currency, accuracy, and purpose criteria to follow the thread of past writing and assess the blogger's ethos.

While the proliferation of social media sources can improve access to information, especially breaking news or complicated scientific information, the viral nature of information dissemination in social networking applications increases the need for assiduous evaluation of blogger credibility (Friedman, 2011). In illustration, we can review the case of the viral blog post by "MIT Research Scientist" Josef Oehmen in the wake of the Fukushima Daiichi nuclear accident. The post, apparently originally composed to calm the fears of a cousin in Kawasaki (Jabr, 2011), was picked up by news sources such as the *Telegraph* and *Discover Magazine*, and was also forwarded throughout the web by email and social media posts. The post widely disseminated erroneous information that the accident was not serious. A simple Internet search to confirm the authority of the blogger, however, shows that while Joseph Oehmen is a research scientist at Massachusetts Institute of Technology, his specialty is not nuclear science but "risk management in the value chain" (Massachusetts Institute of Technology, 2012). This example illustrates the need to evaluate a source's authority to opine on the subject in question, as well as the effectiveness of the technique described in the accuracy section above, of following the thread of a viral post back to its original context.

## PROBLEMS WITH BLOG USERS' RESEARCH PATTERNS

Several studies substantiate concerns about how researchers use blogs in practice, which have implications for educators and scholarly and journalistic researchers. In this section, we detail some of the problems with how researchers use blogs, in the belief that these risks can be mitigated if researchers and educators are aware of them. According to Johnson and Kaye's 2004 paper, despite well-publicized concerns about authority and accuracy, almost three-quarters of blog readers find blogs to be very credible sources of information, and see little reason to rigorously evaluate online sources of information. However, this motivation to evaluate also relates to the researcher's purpose. According to Metzger et. al., users' motivation to facilitate more methodical evaluation techniques is in proportion to the level of risk associated with inaccuracy (2010). Where risk is determined to be low, motivation to use more rigorous techniques of evaluation is also low. In other words, "people seek to find an optimal balance between cognitive effort and efficient outcomes" (p. 417). In her 2004 article, Warnick reviewed three studies which corroborate the above findings, and also show that the criteria users employ depends on the intent and subject matter of the site (p. 262).

In terms of how Internet users approach credibility assessment, Metzger, et al. found that, in an environment where "source" and creator authority is difficult to assess, users rely on other factors. They evaluate site design, evidence that post authors are "enthusiasts" (apparent experts, based on the volume and thoroughness of their posts), and "social confirmation" (in which users assume that a source is credible because a high number of other users feel that it is credible) (Metzger et al., 2010, p. 416, 424, 435). Though assessing a blogger's commenter perceptions can be an important tool for evaluating a blogger's digital ethos, confirmation bias relates more closely to the *information* in a blog post. This can be risky for researchers choosing whether to use a blog, as it may be popular because it is intentionally controversial rather than because it provides accurate information or thoughtful analysis.

Related to vlogs and podcasts, a study by Lee et al. found that the presence of video in a web environment dramatically affects users' perceptions of credibility, irrespective of how the source rates according to other assessment measures. Participants also asserted that high quality production conveyed more credibility, regardless of the source (in this case, public relations firms vs. news sources) (Lee et al., 2010). This point is also emphasized by Selnow (1998) who contended that users place more stock in primary source media, rather than mediated description of an event or issue (qtd. in English et al., 2011, p. 736). English et al. (2011) also found that researchers use the presence of video to rate sources highly rather than evaluating other elements such as the logic of an argument or a source's attempt to appeal to emotion. In short, the presence of video can influence users to believe a source is credible, regardless of whether the other information therein stands up to additional methods of assessment. With the above concerns in mind, and because the presence of multimedia adds so much value to the information in blogs, we will examine some media-specific approaches to evaluation below.

The above research has implications for educators seeking to inculcate students with a healthy dose of skepticism about web sources, but it is also significant for seasoned researchers using emerging online sources in their research. Barzun and Graff cite self-awareness as one of the "virtues of the researcher." They underscore the precept that to conduct research effectively one must know one's own prejudices. With that in mind, we suggest that the above concerns be at the forefront of every researcher's and instructor's mind while considering the use or teaching the use of social media sources.

## MOTIVATION AND ABILITY

Here, we turn to a discussion of how the above problems can be re-envisioned as opportunities for researchers and instructors to instill higher-order critical thinking skills. For example, students are often compelled to be more methodical in their evaluation of sources by the explicit direction of their instructors, but they also have personal motivation to complete a thorough and competent investigation. As Head and Eisenberg (2010) found in their survey of undergraduates:

*What mattered most to students while they were working on course related research assignments was passing the course (99%), finishing the assignment (97%), and getting a good grade (97%). Yet, three-quarters of the sample also reported they considered carrying out comprehensive research of a topic (78%) and learning something new (78%) of importance to them, too. (p. 4).*

While Metzger (2010) found that "Internet users will use more methodical, systematic evaluation (information processing) approaches when motivation is high and "peripheral" or "heuristic" approaches when motivation is low" (p. 416), our focus is on the highly motivated researcher—one who is looking for information to inform or validate their scholarly work; or in the case of students, one who is researching materials for papers that will be evaluated by experts in the field, i.e. their professors. We posit that it is precisely through completing more methodical, systematic evaluation approaches that Internet users develop good intuitive or heuristic abilities, as well as higher-level critical thinking skills.

Researchers experienced with using more conventional peer-reviewed and news sources may find that they have already developed an intuition that gives them an innate ability to evaluate social media sources in their field of expertise (Metzger, 2007, p. 2088). However, with a strong motivation to ensure that their sources are of high authority, they may also find a systemic framework of evaluation useful for recontextualizing the particular credibility features of social media sources.

We acknowledge that there is a fair amount of controversy over the use of checklists in evaluation, and we aim to address this. We argue, according to Metzger's research on motivation, that users in our context (students with assignments and scholars whose professional reputation depends on quality) will be highly motivated to consider using a clear and concise checklist to address credibility issues of resources, particularly those that are considered nontraditional, like blogs. We also have expanded our application of the CRAAP test to consider the spirit of each of its elements, shifting from a simple checklist to a more flexible assessment framework. Researchers new to evaluating social media need some way to develop their intuition, knowledge and critical eye toward what to look for when determining which resources to incorporate in their work, and our application of the CRAAP test fulfills this need. As Lewis & Smith (1993) pointed out "elaborating the given material, making inferences beyond what is explicitly presented, building adequate representations, analyzing and constructing relationships" are all part and parcel to critical thinking and to our suggested application of the CRAAP test (qtd in King et al., 1998, p. 39).

## The CRAAP Test, Heuristics, and Critical Thinking

Higher-order thinking skills are "grounded in lower order skills such as discrimination, simple application and analysis, and cognitive strategies and are linked to prior knowledge of subject matter content" (King et al., 1998, p.1). This implies that the path to higher-order thinking begins with using simple skills and innate knowledge or "intuition." The CRAAP test provides a scaffolded approach to evaluating online resources.

Several sources in the library field have criticized the checklist approach. Meola (2004) asserted that checklists are unrealistically long, do not provide guidance on how to evaluate their criteria, or, when they do, offer unreasonable advice (such as requiring an email address or other contact information). Dahl wrote, "Commonly cited shortcomings of the checklist approach are that it can be difficult and/or cumbersome to implement, it encourages mechanistic rather than critical thinking, and it is not responsive to the varied contexts, needs and motivation levels of students" (2009, p.12). Burkholder asserted, "While convenient, the CRAAP questions imply that high-quality sources are recognizable because they are constructed according to a rigid set of guidelines" (2010, p.5). We believe that our approach to using the CRAAP test, along with Metzger's findings below, negate these concerns.

Metzger, et al. (2010) found that Internet users naturally apply various heuristic methods to web evaluation. In other words, her study showed that users already have several intuitive tools at their disposal. Users tend to turn to "enthusiasts," who are "presumed but noncredentialed experts." They determine whether the enthusiasts are experts by evaluating reputation. This is an approach that is implied in the authority criteria of the CRAAP test. They use other "indicators such as topic mastery, writing style, spelling and grammar, and the extent of details offered" (p. 424). These are methods used in the accuracy and relevance criteria.

That these skills are already intuitive for many searchers considerably lessens the burden of completing a checklist. It also refutes Warnick's (2004) assertion that use of a checklist, which she describes as a "'one-size-fits-all' approach to Web site credibility assessment [,] does not work well because it does not align with what users actually do" (p.262). Instead, the checklist provides signposts to remind researchers what kinds of elements they should be locating and evaluating.

Meola (2004) also asserted that checklist tests do not facilitate higher-order thinking: "The checklist model in practice […] can serve to promote a mechanical and algorithmic way of evaluation that is at odds with the higher-level judgment and intuition that we presumably seek to cultivate as part of critical thinking" (p. 337). We believe that our approach to using the CRAAP test to evaluate social media sources addresses this concern as well. A researcher need only consider the spirit of each of the criteria and apply them according to the source's specific context and research interest. Critical thinking and reflection arises from this process of developing an understanding of the essence of the CRAAP criteria. It comes from researchers practicing crafting their own questions, which were inspired by the CRAAP test and are dependent on the social media context, to determine whether their source is of high quality.

## FUTURE RESEARCH DIRECTIONS

In this chapter, we present the argument that the CRAAP method of website evaluation is an effective approach for assessing the appropriateness of blogs for research. Despite arguments to the contrary in literature about evaluation of online sources, we present evidence that the CRAAP test is an effective tool for evaluation of social media sources such as blogs. The test's effectiveness is boosted by consideration of the essential spirit of its five criteria to craft context-specific questions for evaluation, rather than a more rigid reading of the test elements.

Continuing application of the CRAAP test to emerging online media would be helped by in-depth analysis of new social media formats as they come into use as information resources. This would ideally include a detailed survey of emerging features and research applications, as well as assessment of each feature's potential as a source for information that can be used in evaluation.

Metzger, et al.'s (2010) finding that users employ more rigorous evaluation techniques in proportion to the degree of risk in using inaccurate information suggests that it would be useful to develop a study as to how users evaluate social media formats in practice. With this information, we could further refine evidence-based approaches to credibility analysis and evaluation.

## CONCLUSION

The intent of using the CRAAP test is to develop researchers' evaluative skills, eventually endowing them with fine-tuned intuition and enhanced higher-order reasoning in evaluating blogs as a research source. An expanded contemplation of the spirit of the checklist criteria encourages a flexible approach to credibility assessment and is well-adapted to the particular features of blogs. The anarchistic nature of social media demands that a researcher using the CRAAP test account for contextual considerations, employing critical thinking skills. We assert that this contradicts Meola's (2004) claim that checklists foster algorithmic or mechanical thought. Repeated practice in assessing blog credibility with the CRAAP test will develop the reflexive skills that become intuition and knowledge.

Metzger's (2007) depiction of the dual process model of evaluation shows how easily a researcher can leap from having a need for information to making informed judgments when provided with the tools to make the judgment. Other studies (Currie et al., 2010; Hargittai et al., 2010), revealed that Internet users can *verbalize* what they should be looking for to determine credibility, but that they often do not actually take the steps to do so. As Currie, et al. (2010) reported:

*Even though the students understood the need to find valid or scholarly information, the authors concluded that the students were not skilled in the application of evaluative criteria. Indeed, these students articulated only three or four specific criteria they would use to evaluate a source, used them repeatedly, and then could not seem to think of any others. They often used the proper terminology in describing their selection process to the authors, but clearly did not understand the definitions of the terms. For example, while several of the students indicated they wanted to find a "credible" source, they were unable to list many of the specific criteria they could use to determine whether a source was credible or not. (p. 122-123).*

With this in mind, we can see how the CRAAP test can be used by those instructing new researchers to lead them to critical evaluation while using exciting and new, but riskier, information sources. Although beginning researchers' heuristic methods of evaluation are a good start, the educator adds a critical thinking component to the research process by discussing expectations, providing tools, and demonstrating examples of rigorous evaluation methods for nontraditional resources such as blogs and other social media applications.

With practice, experienced scholars and beginning researchers alike develop an intuitive, evaluative assessment process, creating their own queries using a multitude of tools and skills. This type of evaluation becomes ingrained, a habit and skill that will aid the researcher in more mundane, low-risk information gathering as well. As Hargittai et al. (2010) pointed out, those using online sources "are not always turning to the most relevant cues to determine credibility of online content. Accordingly, initiatives that help educate people in this domain—whether in formal or informal settings—could play an important role in achieving an informed Internet citizenry" (p. 487). We believe that with the growth of blogs in the online environment, the ability to locate, evaluate and incorporate these rich resources into scholarly research will yield rewards.

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## KEY TERMS AND DEFINITIONS

**Blog:** Often updated web page in which dated posts are listed in reverse chronological order. Usually includes features such as comments and archive of past posts.

**Evaluation:** Assessment of a source for quality and relevance to a researcher's work.

**Flog:** Fake blog.

**Hashtag:** The "#" symbol, placed before a folksonomic keyword. Used in social networking applications to categorize posts and comments.

**Hyperlink:** Clickable link within an online publication. Takes the user to a new Internet source.

**Microblog:** A blog with shorter posts. Often the microblog software prescribes a word limit.

**Post:** A chunk of writing on a particular topic, uploaded to a blog or microblog.

**Trackbacks:** links from one blog post to another blog's posting.

**Tweet:** Microblog post on the Twitter platform.

**Vlog:** Blog in which posts are created using video sometimes with associated text to situate the video.