

**THE PERCEIVED CREDIBILITY OF ELECTRONIC MAIL  
IN NEWSPAPER NEWSGATHERING**

Bruce Garrison  
Journalism and Photography Program  
School of Communication  
University of Miami  
P.O. Box 248127  
Coral Gables, FL 33124-2105  
305-284-2846, [bruce@miami.edu](mailto:bruce@miami.edu)

A paper presented to the Newspaper Division, Association for Education in  
Journalism and Mass Communication conference, August, 2003, Kansas City, Missouri.

# **THE PERCEIVED CREDIBILITY OF ELECTRONIC MAIL IN NEWSPAPER NEWSGATHERING**

## **ABSTRACT**

Journalists from U.S. daily newspapers responded to a national survey focusing on the credibility of electronic mail use in newsgathering. Factor analysis produced a six dimension solution. The dominant factor was accuracy, but other factors included completeness, sociability, clarity, timeliness, and techno-complexity. Journalists expressed concern for the perceived lack of accuracy and completeness, but were ambiguous about its sociability. Clarity and understandability were viewed as significant components, as were speed and timeliness. The high technology characteristic was seen as a complication.

Bruce Garrison would like to thank Dean Edward Pfister for providing resources for this study. He would also like to thank colleagues Dr. Paul Driscoll, Dr. Michel Dupagne, Dr. Michael Salwen, and research assistant Margarita Martín-Hidalgo for their valuable assistance.

## **THE PERCEIVED CREDIBILITY OF ELECTRONIC MAIL IN NEWSPAPER NEWSGATHERING**

Electronic mail has become an important communication tool for journalists.<sup>1</sup> They take advantage of its speed, low cost, convenience, flexibility, power, and security despite the hardware and computer literacy requirements, occasional language complications, and accessibility problems. They also use electronic mail to locate hard-to-find sources and to reschedule interviews. Electronic mail has, in effect, replaced fax machines in the process of transferring of information into newsrooms. It is faster, more reliable, personalized, and does not require paper.<sup>2</sup>

Concerns that journalists have traditionally expressed about sources— such as verification of identification and general authenticity matters— are often found in research about electronic mail and other network communication. Some characteristics of electronic mail, such as the anonymity of sender location, role of the sender, and even the identity of the sender, are problematic. Similarly, the absence of social context clues is often troubling to professionals who must evaluate the quality of the information provided before it is used. These matters often lead to concerns about fabricated or artificial quotations and other types of information forgery.<sup>3</sup> Frank concluded that electronic mail is valuable to reporters, but that it falls short when compared to other interview techniques.<sup>4</sup>

An issue that has emerged with this growth in use is the credibility of new technologies and new media news delivery systems. Widespread access to personal

information, including tracking online purchases, property ownership records and residential telephone numbers, have led to increasing public distrust of online sources of information. One in three media Web sites posted their privacy policies for information provided voluntarily by users.<sup>5</sup> Online statements of privacy policy are often lengthy and nearly incomprehensible because of the legal jargon employed.

Much has been written over the past half century about communicator credibility. Since the early experimental work of Hovland and Weiss, much research effort has been made toward determining the dimensions of individual and organizational source credibility.<sup>6</sup> Two perennial dimensions of source credibility have been the trustworthiness and expertise of the source.<sup>7</sup> Whitehead's work, almost two decades later, identified trustworthiness, but also emphasized professionalism or competence, dynamism, and objectivity.<sup>8</sup> Safety, qualification, and dynamism were also identified in research to be source credibility factors.<sup>9</sup> As new mass communication technologies have appeared, research has turned to investigate perceived credibility and components of audience attitudes that comprise those perceptions. Interest in newspaper credibility may have peaked in the late 1980s with a number of national studies, but the media credibility issue has recently been revived with the involvement of newspapers and television in Internet and Web-based news services.

### **Computer-Mediated Communication and Credibility**

A number of empirical studies have analyzed the dimensions of credibility of computing technology, computer-mediated communication, the Internet, the Web, and online news. Because of the early public perceptions of the precision and accuracy of

computers that led to a common belief that they were infallible and believable, even the basic credibility of computer-based technologies has been studied.<sup>10</sup> A number of scholars have emphasized the importance or “crucial” nature of such research.<sup>11</sup> Mayo and Leshner defined credibility in terms of its accuracy, fairness, bias, trustworthiness, and completeness. They concluded that computer-based news reporting was as credible as news reporting based on more traditional approaches.<sup>12</sup>

Media credibility research has largely ignored online news credibility because it remains new to journalism, but this may be changing. Scholars are beginning to publish online news use and credibility studies and some professional groups have looked at the subject as well.<sup>13</sup> There are substantial differences in online news and other, more-established news media such as television, radio, and newspapers. Online news can break at any time, thus, the dimension of timeliness must be considered. Flanagin and Metzger concluded that the Internet is a “multidimensional technology used in a similar manner to other, more traditional media.”<sup>14</sup> News communication technologies extend users’ capabilities but eventually are folded in with traditional media. They also found information-retrieval and information-giving similarities. They concluded that “needs fulfilled by these channels cluster in ways consistent with past research, regardless of the technologies employed to meet them.”<sup>15</sup>

Tseng and Fogg found that computer users desire to trust their systems, but that the trust is often undermined when the system delivers erroneous information. They described four types of computer-based credibility: presumed (based on assumptions) credibility, reputed (based on third-party reports) credibility, surface (based on primitive inspection) credibility, and experienced (based on first-hand experience) credibility.

Factors they identified included user expertise, user understanding, user need for information, and evaluation errors influenced this credibility.<sup>16</sup>

Flanagin and Metzger concluded that the Internet was as credible as television, radio, and magazines, but not newspapers. Their study, however, did not distinguish between print and online newspapers. They found that credibility among different types of information sought by audiences, such as news and entertainment, varied by medium. Respondents reported that they did not verify information found on the Internet, but this finding varied by the type of information needed. The amount of experience using the Internet and how an individual perceived the information were associated with whether efforts were made to verify information found online.<sup>17</sup> Schweiger found newspapers were rated ahead of the Web and television on nine of eleven credibility items. He also found that Web users and non-users rate the credibility of the Web as remarkably similar to television and newspapers.<sup>18</sup>

Nadarajan and Ang found few online newspapers with corrections policies, but that errors were corrected as needed.<sup>19</sup> They concluded that the capabilities of the Web, such as hyperlinks and archiving, were not well used to enhance online news and information accuracy. In fact, they said current practices “add to the clutter of viewpoints that is symptomatic of this age of information overload.”<sup>20</sup> While they do not directly connect this to online news credibility, the implications are clear.

Sundar determined credibility, liking, quality, and representativeness to be factors in the perception of online news stories.<sup>21</sup> Credibility in this context was a “global evaluation of the objectivity of the story.”<sup>22</sup> Johnson and Kaye focused on political information. Their research found online media to be more believable, fair, accurate, and

in-depth than traditional news media. Both online news media and traditional news media were judged by respondents to be somewhat credible.<sup>23</sup>

Branding, or being part of a previously established news organization, contributes to an online site's credibility. Ognianova examined the value of journalistic identity on the Web. Using experimental procedures, she found that online news providers associated with an established news organization such as a television station or newspaper, were judged more credible than content providers without such identification. Advertising was also judged more credible on sites with established journalistic identity compared to those without it.<sup>24</sup> Schweiger found that German students valuing a particular newspaper also tended to consider its Web site credible, even if they had never seen it.<sup>25</sup> Robinson and Kohut concluded that "what matters is neither personality nor technology. What matters most is news 'type,' where 'type' pertains mainly to the kind of journalism the source is believed to be practicing."<sup>26</sup>

Sundar determined that subjects rated stories with direct quotations from sources to be significantly higher in credibility and quality than those without. Use of direct quotations did not appear to affect subject ratings for online news or representativeness-newsworthiness.<sup>27</sup> Kiouisis found news credibility perceptions influenced by media use and interpersonal discussion of news. Newspapers were seen as more credible than online news or television. Online news, however, was rated more credible than television. Like other studies of print and broadcast news media, Kiouisis concluded that the credibility rating of a medium was associated with its use. He also found links between discussion of news and perceptions of television news, but not for online news or newspapers. He

offered evidence of links between media use and public perceptions of credibility for newspapers and television news, but not in the assessment of online news.<sup>28</sup>

Johnson and Kaye compared traditional news sources and non-traditional online news sources among politically interested Web users. They concluded that online news media and online candidate literature were perceived to be more credible than traditional print and broadcast news media, even though both online news and traditional news media were perceived to be somewhat credible. No differences were found for news magazines and issue-oriented sources.<sup>29</sup> Sundar evaluated source attribution effects in perception of online news stories. Stories with attributed direct quotations were rated higher in credibility than identical stories not containing the quotations. The use of direct quotations did not affect liking for online news or perception of newsworthiness-representativeness of online news.<sup>30</sup>

Numerous researchers have developed original media credibility scales. Despite the diversity of scales, the various scale items are highly similar and usually measure the same underlying dimensions. Rather than searching for a single scale, researchers often create *ad hoc* scales to tap into hypothesized “dimensions” of credibility. Sundar developed a credibility scale applicable to both print newspapers and online newspapers.<sup>31</sup> Flanagin and Metzger used single-item measures in studying the credibility of Internet information. They operationalized credibility as a multidimensional concept built from five traditional components found in the literature: believability, accuracy, trustworthiness, bias, and completeness.<sup>32</sup> Trustworthiness, fairness, bias, completeness, respect for privacy, representation of individual interests, accuracy, concern for community well-being, separation of fact and opinion, concern for public interest, factual

foundations of information published, and qualifications of reporters were used as one set of credibility measures by Rimmer and Weaver.<sup>33</sup>

### **Credibility Measures**

Semantic differential scales have been widely used in measurement of source credibility. Infante, for example, offered evidence supporting the construct validity of these scales.<sup>34</sup> Ognianova utilized nine semantic differential items to measure online news story credibility, including factual-opinionated, unfair-fair, accurate-inaccurate, untrustworthy-trustworthy, balanced-unbalanced, biased-unbiased, reliable-unreliable, thorough-not thorough, and informative-not informative.<sup>35</sup>

Wanta and Hu used believability and affiliation indices to evaluate media credibility. The believability index was built around media manipulation of public opinion, getting facts straight, dealing fairly with all sides of an issue, and separation of fact from opinion. Affiliation was measured with concern for community well being, watching out for reader interests, and concern for public welfare.<sup>36</sup> Gaziano and McGrath identified twelve dimensions of newspaper and television news credibility. They were fairness, bias, completeness, accuracy, respect for privacy, watching out for people's interests, concern for community, separation of fact and opinion, trust, concern for public interest, factual, and level of training.<sup>37</sup> Gaziano also found twelve different sets of credibility operationalizations. These included believability, accuracy, completeness, and covering up facts, trustworthiness and reliability, being unbiased, balance of coverage, fairness, objectivity, other characteristics of press performance, such as invasion of privacy, covering up stories, overall evaluations of job performance, confidence in media

institutions, comparisons of media with other institutions, independence of media from special interests and other organizations and institutions, power/influence of media in community or society, relationship of news media to government, honesty and ethical standards, and professionalism-training.<sup>38</sup>

Infante used trustworthiness, expertise, and dynamism. For trustworthiness, he used honest-dishonest, trustworthy-untrustworthy, and sincere-insincere. For expertise, he chose skilled-unskilled, qualified-unqualified, and informed-uninformed. For dynamism, he included bold-timid, active-passive, and aggressive-meek.<sup>39</sup> Rodgers, Cameron, and Brill studied advertising effects on online news using credibility, believability, and trustworthiness semantic differential scale attitude measures.<sup>40</sup> Johnson and Kaye employed believability, fairness, accuracy, and depth of information in their study.<sup>41</sup> Sensationalism was one of six dimensions used by Sundar.<sup>42</sup> He also used accuracy, believability, bias, fairness, and objectivity. Kiouisis measured online news credibility by asking respondents to assess whether online news is factual, concerned with making profits, invades people's privacy, concerned about the community's well being, and trustworthy on a five-point Likert-type scale.<sup>43</sup>

## **Research Questions**

Despite the growing body literature about electronic mail, only a limited number of empirical studies have focused upon electronic mail as a news reporting resource. Research has not provided much insight into the perceptions of electronic mail credibility among journalists. If journalists do not see the resource as credible, its use will undoubtedly diminish. If it is valued and seen as credible, its use may continue to

increase and its importance as a reporting resource will grow. The next step, it seems, would be to focus on the components or dimensions of electronic mail credibility. To move toward that end, these research questions were derived from the literature and will guide this study:

1. *What are the basic dimensions of electronic mail credibility?*
2. *To what degree is accuracy a component of electronic mail credibility?*
3. *Do journalists identify technological concerns and issues in use of electronic mail as a reporting resource?*
4. *Are traditional credibility dimensions of trustworthiness, objectivity, and completeness part of the conceptualization of electronic mail in a newsgathering context?*
5. *To what degree are timeliness and speed viewed as components of electronic mail use in newsgathering?*

## **STUDY METHOD**

A national mail survey of newspaper journalists was conducted in fall 2001. Respondents were selected randomly using a multi-stage sample design. From a comprehensive list of nearly 1,600 daily newspapers in the United States, 500 newspapers were chosen using systematic interval sampling. To identify specific respondents contacted at each newspaper in the sample, the Web site of each newspaper was visited. The name of a current reporter or editor was randomly selected from news coverage on one business day in September 2001. Cover letters, questionnaires, and stamped, self-addressed return envelopes were sent directly to these respondents in early

October 2001. A second mailing, to enhance response rate, was sent in early November 2001. The response rate was 40.2% (n = 201). While this response rate may be considered low, respondents reflected the primary demographics of the target population.<sup>44</sup>

A 47-item semantic differential credibility scale was developed. It was designed to evaluate the dimensions, or characteristics, of electronic mail use in newsgathering. The semantic pairs were chosen from those developed and tested by Osgood, Suci, and Tannenbaum<sup>45</sup> and used in computing credibility scales developed by Tseng and Fogg.<sup>46</sup> Furthermore, this scale items drew upon the media and news credibility scales discussed in the preceding section.<sup>47</sup> The scale asked journalists to think about electronic mail as a potential newsgathering resource.<sup>48</sup> The electronic mail credibility scale was pretested using 26 student journalists and faculty members, analyzed, modified, and pretested again before the final scale was prepared.

Data for the scale were factor analyzed using the Statistical Package for the Social Sciences.<sup>49</sup> Mean scores for all scale items are listed in Table 1. The principal component analysis extraction method and Varimax rotation with Kaiser Normalization was utilized. Initial data factoring with a minimum 1.0 eigenvalue criterion resulted in a nine-factor solution accounted for 66.1% of common variance. However, some variables loaded below the desired .500 level and a total of 14 adjective pairs were eliminated. Eliminated variables are shown in boldface in Table 1. Factor analysis of the remaining 33 adjective pairs resulted in a six-factor solution accounting for 64.4% of variance.<sup>50</sup> The factor solution is reported in Table 2. The Cronbach Alpha reliability coefficient was 0.948 for the 33-item scale.

## FINDINGS

Journalists recognized the high technology element of electronic mail first and foremost in their evaluations of electronic mail as a newsgathering resource as shown in Table 1. The high tech characteristic rated highest on the scale ( $M = 1.10$ ). Similarly it was seen as new school ( $M = 1.05$ ), fast ( $M = 0.90$ ), and current ( $M = 0.86$ ) in the highest rated adjective pairs. They also viewed electronic mail as readable, simple, useful, timely, efficient, and appropriate. There were a number of characteristics, however, upon which journalists could not decide. These included precise-imprecise ( $M = 0.01$ ), weak-strong ( $M = -0.01$ ), cautious-rash ( $M = 0.03$ ), colorful-colorless ( $M = -0.04$ ), and public-private ( $M = -0.05$ ). There were several characteristics that journalists viewed most negatively as well. These included sufficient ( $M = -0.34$ ), partial ( $M = -0.30$ ), deep ( $M = -0.27$ ), and incomplete ( $M = -0.22$ ).

### 1. *What are the basic dimensions of electronic mail credibility?*

The six-factor solution yielded dimensions indicating diverse concerns. The factor that explained the most variance reflected the general *accuracy*, correctness, and appropriateness of electronic mail use in newsgathering. Other factors reflected concerns about the *completeness* of electronic messages, the *sociability* of communication, *clarity* in communication, *timeliness* of information, and the *complexity* of new *technology*.

*Factor 1, Accuracy*— There are twelve adjective pairs constituting this complex factor. The items reflect concern for correctness, accuracy, and appropriateness of use of electronic mail. It shows interest by journalists in accuracy and journalistic safety when using electronic mail to gather information. The factor is most characterized by the

adjective pair, incorrect-correct, which loaded at .788. Respondents generally felt that electronic mail is neither correct nor accurate (inaccurate-accurate, factor loading of .754), but viewed it as unusual (unusual-usual, factor loading of .688). They also believed electronic mail to be appropriate (.626) to use, but doubted its trustworthiness, safety, or whether it was wise to use it under some reporting circumstances.

*Factor 2, Completeness*— The second factor reflected journalists' dissatisfaction with electronic mail's flaws as an interviewing and information gathering tool. It is anchored to incomplete-complete (.682) and objective-subjective (.681). Respondents also felt electronic mail was incomplete, shallow, and insufficient for news reporting and were uncertain about whether it was objective or subjective. In fact, journalists rated electronic mail lowest among all adjective pairs on insufficient-sufficient (mean = -0.34), deep-shallow (mean = -0.25), and incomplete-complete (mean = -0.22).

*Factor 3, Sociability*— The sociability factor stressed electronic mail's shortcomings and that it was perceived as impersonal. The factor's strongest variable was unsociable-sociable (.773). Journalists did not view electronic mail as sociable. The other factor loadings suggest that electronic mail was perceived as neither weak nor strong nor colorful nor colorless. They did perceive it as a friendly, interesting, and free means of communicating with sources and others in the newsgathering process.

*Factor 4, Clarity*— The clarity dimension demonstrated the readability of electronic mail (readable-unreadable, .808) as well as its understandability (understandable-not understandable, .753). Journalists felt electronic mail was quite readable and understandable. Furthermore, they felt electronic mail in news reporting was useful, clear, and important.

Factor 5, Timeliness— Journalists also identified a time element dimension with their electronic mail information gathering. They recognized the speed and timeliness components of electronic mail in gathering news. Fast-slow loaded strongest (.812) for the factor, but timely-untimely (.794) was also a strong loading variable. Journalists rated electronic mail as very current and reflective of breaking news.

Factor 6, Techno-Complexity— There are only two adjective pairs in this factor. The factor is best described using both pairs. On one level, journalists see this dimension as a matter of complexity (complicated-simple, .730). But, on the other hand, they seem to identify the dimension as high tech-low tech (.669). Journalists clearly see electronic mail as a high technology means of communication. High tech-low tech scored the highest positive mean, 1.14. Electronic mail was rated as complicated by respondents.

Thus, the study's remaining research questions may be addressed:

2. *To what degree is accuracy a component of electronic mail credibility?*

Accuracy is the foremost concern of journalists when using electronic mail for news reporting. It is the dominant factor in the analysis and the adjective pair incorrect-correct was the strongest loading pair. From this analysis, it appears that accuracy may be the single-most important element in determining journalists' use of electronic mail for news reporting.

3. *Do journalists identify technological concerns and issues in use of electronic mail as a reporting resource?*

The existence of Factor 6 points to the importance of technological concerns to journalists participating in the study. The Techno-Complexity factor, while consisting of only two adjective pairs, is separate and distinct from the five other dimensions.

Journalists clearly have an interest in technical issues related to communicating with electronic mail with sources and the information obtained in electronic mail messages. They see electronic mail has having a complicated nature and a high-tech nature and the degree to which these are perceived as barriers may determine use levels in information gathering.

4. *Are traditional credibility dimensions of trustworthiness, objectivity, and completeness part of the conceptualization of electronic mail in a newsgathering context?*

Completeness is clearly an important part of electronic mail's acceptance as a newsgathering tool. Until journalists perceive it to be complete, it may not be widely used. The respondents in this study identified completeness as the strongest component of the Factor 2. Furthermore, these respondents felt objectivity-subjectivity to be an equally important part of Factor 2. Trustworthiness, while a part of Factor 1, is also regarded to be significant in the use of electronic mail in newsgathering.

5. *To what degree are timeliness and speed viewed as components of electronic mail use in newsgathering?*

For journalists, timeliness is a closely held value. Electronic mail is perceived to be fast and Factor 5 reflects the time element in newsgathering by electronic mail. The two strongest adjective pairs for Factor 5, fast-slow and timely-untimely, indicate that journalists judge the usefulness of electronic mail in terms of speed. The other two components, current-dated and old news-breaking news, also point to the importance of this dimension to journalists. Clearly, one of the most appealing elements of electronic mail is its instantaneous nature compared to other conventional information-gathering approaches.

## DISCUSSION

Electronic mail is established as a communication tool, but remains somewhat unproven in a professional environment such as a newspaper newsroom. While it is just three decades old, it remains quite new in some contexts.<sup>51</sup> Journalists are only beginning to understand its uses in both information distribution and information gathering. This study has examined the underlying dimensions in information gathering. The six factors are highly revealing. They demonstrate issues and concerns that these journalists relate to use of electronic mail. Journalists see electronic mail as a valid reporting tool, but also recognize its flaws. It is apparent there is extreme concern for accuracy of information obtained.

Journalists are clearly aware of the high technology value of electronic mail in their work. But they question how well it fits as a newsgathering resource. The first factor, Accuracy, is clearly the most interesting of the set and points to this issue. Accuracy, correctness, and appropriateness of electronic mail reflect considerations of whether electronic mail should be used for newsgathering or for other more non-journalistic tasks. The factor, because of its wide range of components, is difficult to interpret. Attention to the accuracy and correctness of information obtained is a high priority of respondents. These journalists are cautious and worry about whether they should trust information obtained with electronic mail. They feel the information should be questioned or challenged and see a certain amount of professional danger in its use. As a result, they must seek alternative ways to confirm information such as more traditional telephone conversations, previous familiarity with the source, or additional research.

There is awareness of the incomplete nature of the news gathered. The standard in this case, apparently, is the in-person interview in which all non-verbal cues and other aspects of information gathering are available. Just as the telephone is incomplete, journalists see electronic mail as somewhat incomplete, shallow, and insufficient. They remain mixed about the objective nature of electronic mail as well. This dimension suggests that journalists use electronic mail in conjunction with other information-gathering processes common to newsrooms today.

Journalists remain uncertain about the sociability dimension of electronic mail. They see electronic mail as having certain impersonal components in the information-gathering process that apparently concern them. While they view electronic mail as somewhat unsociable, they also are not sure whether it is colorful or colorless and whether it is weak or strong as an information-gathering device. They perceive it as friendly as well as important and useful to their work. Video and audio messaging, while not measured in this study, has been available on the Web for several years and remains rarely used. This feature of electronic mail, as well as conferencing tools, may not be widely used because journalists are limited by their hardware and software available in the newsroom or because they have not learned how to use it. When it is available, messaging and conferencing tools may give a more personal and sociable feel to electronic mail as well as provide confirmation of sources of information.

These journalists view electronic mail as clear and understandable and, because of its clarity, to be useful and important in their newsrooms. Clarity is based on its readability and understandability. It is also seen as highly useful and important to their work as information gatherers. With improvements in security and refinements in use

techniques involving sources, it seems that usefulness and importance will only increase over time.

Still another important element of electronic mail for journalists is its speed and timeliness. This characteristic clearly contributes to its importance and usefulness as well, but it emerges as its own dimension because timeliness and speed matter so much in daily newspaper journalism. Because of the instant nature of much of journalism, this factor reflects an important feature of electronic mail that appeals to many reporters and editors. Currency of electronic mail information was another descriptor reflecting this point of view. The fact that it can be current when transmitted by electronic mail earned current-dated one of the highest mean scores among all adjective pairs. Its use in breaking and developing stories is also emphasized through the high rating of old news-breaking news and its high loading on the factor.

The highly technical nature of electronic mail, for some journalists at least, is also significant enough to become one of the dimensions of this information-gathering resource. Whether the factor is important and meaningful is debatable. It is clearly the least important of the six factors. The two items contribute little to the total explained variance. Nevertheless, the factor suggests that journalists see it as a complication in their lives, but, apparently, are willing to cope with that aspect of electronic mail to gain access to its advantages. Techno-complexity has often appeared in literature involving uses of new technologies and, the literature has shown, journalists ease into familiarity as newness wears off and such fears and concerns about complications disappear.

There may be age or generational factors at play when looking at electronic mail use in newsrooms. More experienced and older journalists—such as those who did not

grow up using electronic mail— may have different attitudes about electronic mail. These individuals often have more senior positions in newsroom management that do not involve information gathering as much as they relate to information management. As a result, they may find different uses for electronic mail while at work. It seems appropriate to investigate age as a factor here and further analysis of these data will focus on this variable.

What do these dimensions of electronic mail credibility mean for newsrooms? The concern for the accuracy-appropriateness and complexity of the new high tech means of communicating and gathering information alone points to the need for additional training, discussion, and education-sharing about uses of electronic mail. Journalists not familiar with use of a particular electronic mail system may inadvertently sent information to the wrong individuals, make public confidential information, prematurely delete needed press releases or interview content, or otherwise err in the transfer of electronic mail-based information. Such problems may mostly become minor concerns, but they may also be potentially embarrassing for the individual, a newsroom, or an entire organization.

It is also apparent that there is need for review of newsroom policy involving electronic mail or, if there is no policy, development of policy about use of electronic mail in newsgathering. With their widespread concerns for accuracy, completeness, social interaction with sources, clarity, timeliness, and the complexity new technology, newsroom managers should focus on policies involving confirmation of identify of sources and the information those sources provide. If not policy level, certainly newsrooms should discuss the amount of time to wait for responses, for example, in the

same way journalists must wait for callbacks from telephone messages. Methods of dealing with non-response to electronic mail in stories are also potential policy matters for newsrooms. Clearly, there are also legal and policy implications for short-term storing and long-term archiving electronic mail in newsrooms, particularly that electronic mail which contains information used in stories or information of a confidential nature that could be requested as part of a court action.

It is important to re-examine these findings in a theoretical context that goes beyond the conceptual literature of credibility. It seems that a uses and gratifications theoretical approach may enhance the meaningfulness of these findings. But it also appears that there may be potential to examine the findings in the context of the sociology of news work as well. This study provides a beginning place in the examination of credibility of electronic mail in newsgathering but would be stronger with a conceptual foundation. It is likely that journalists working in other contexts, such as online news Web sites, television and radio newsrooms, or newsmagazine journalism, may view the credibility of electronic mail differently or, at least, offer subtle distinctions in their use and understanding of electronic mail in news reporting. It would also be useful to determine if different types of users— such as groups defined by gender, region, newsroom role, or other demographic characteristics— view electronic mail differently as well. Perhaps additional study will reveal whether this is the case or not.

**TABLE 1**  
**MEANS FOR ADJECTIVE PAIRS**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Var.</b>
Hi-tech-low tech	188	1.10	.875	.765
<b>Old school-new school</b>	<b>182</b>	<b>1.05</b>	<b>.836</b>	<b>.699</b>
Fast-slow	183	.90	.964	.929
Current-dated	186	.86	.976	.953
Readable-unreadable	187	.76	.921	.848
Complicated-simple	182	.76	.810	.657
Useless-useful	184	.76	1.030	1.060
Timely-untimely	187	.75	1.094	1.197
<b>Efficient-inefficient</b>	<b>183</b>	<b>.71</b>	<b>1.021</b>	<b>1.042</b>
Appropriate-inappropriate	189	.67	1.143	1.307
Understandable-not understandable	187	.56	.922	.850
Old news-breaking news	186	.49	.914	.835
<b>Disorganized-organized</b>	<b>183</b>	<b>.48</b>	<b>.857</b>	<b>.735</b>
Incorrect-correct	188	.44	.971	.943
<b>Knowledgeable-not knowledgeable</b>	<b>187</b>	<b>.42</b>	<b>.872</b>	<b>.761</b>
<b>Invasive-non-invasive</b>	<b>183</b>	<b>.40</b>	<b>.920</b>	<b>.847</b>
Unimportant-important	183	.40	.920	.845
Inaccurate-accurate	188	.39	.944	.891
Interesting-uninteresting	183	.36	.889	.791
Incompetent-competent	187	.33	.846	.716
<b>Bad-good</b>	<b>183</b>	<b>.32</b>	<b>.902</b>	<b>.813</b>
Unclear-clear	182	.31	.925	.855
Constrained-free	182	.29	.933	.871
Dishonest-honest	187	.28	.810	.656
Qualified-unqualified	185	.26	.834	.696
<b>Believable-unbelievable</b>	<b>183</b>	<b>.22</b>	<b>.919</b>	<b>.845</b>
Friendly-unfriendly	183	.22	.959	.919
Reputable-disreputable	183	.21	.867	.751
Unusual-usual	187	.20	1.127	1.270
Trustworthy-untrustworthy	184	.17	.959	.920
Credible-not credible	184	.17	.954	.909
Dangerous-safe	183	.14	.872	.760
<b>Meaningful-meaningless</b>	<b>183</b>	<b>.14</b>	<b>.799</b>	<b>.639</b>
<b>Skilled-unskilled</b>	<b>187</b>	<b>.11</b>	<b>.879</b>	<b>.773</b>
Unwise-wise	183	.09	.830	.689
Objective-subjective	183	.08	.901	.812
<b>Cautious-rash</b>	<b>183</b>	<b>.03</b>	<b>.801</b>	<b>.642</b>
<b>Precise-imprecise</b>	<b>186</b>	<b>.01</b>	<b>.956</b>	<b>.913</b>
Weak-strong	182	-.01	.860	.740
Colorless-colorful	187	-.04	.994	.987
<b>Public-private</b>	<b>188</b>	<b>-.05</b>	<b>1.110</b>	<b>1.233</b>
Unsociable-sociable	183	-.11	1.060	1.124
<b>Biased-unbiased</b>	<b>187</b>	<b>-.13</b>	<b>.915</b>	<b>.837</b>
Incomplete-complete	188	-.22	1.004	1.009
Deep-shallow	183	-.27	.818	.670
<b>Partial-impartial</b>	<b>183</b>	<b>-.30</b>	<b>.926</b>	<b>.858</b>
Sufficient-insufficient	187	-.34	1.073	1.151

Items in boldface were eliminated in final factor analysis. Adjective pairs means ranged from -2 to 2 with zero as midpoint.

**TABLE 2**  
**FACTOR DIMENSIONS**

	1	2	3	4	5	6
<b><u>FACTOR 1 ACCURACY</u></b>						
Incorrect-correct	<b>.788</b>	.214	.036	.190	.155	.055
Inaccurate-accurate	<b>.754</b>	.215	.068	.164	.050	-.102
Unusual-usual	<b>.688</b>	-.071	.044	.120	.075	.061
Appropriate-inappropriate	<b>.626</b>	.207	.051	.175	.168	.233
Unwise-wise	<b>.582</b>	.201	.467	.249	.217	.104
Incompetent-competent	<b>.571</b>	.445	.211	.105	.129	.119
Trustworthy-untrustworthy	<b>.559</b>	.523	.132	.243	-.018	.084
Reputable-disreputable	<b>.550</b>	.349	.353	.239	-.083	-.018
Qualified-unqualified	<b>.534</b>	.400	.187	.219	.207	.151
Credible-not credible	<b>.529</b>	.394	.295	.437	.069	.090
Dishonest-honest	<b>.528</b>	.230	.082	.517	.081	.036
Dangerous-safe	<b>.522</b>	.438	.335	.129	-.130	.143
<b><u>FACTOR 2 COMPLETENESS</u></b>						
Incomplete-complete	.339	<b>.682</b>	.228	.042	.134	-.114
Objective-subjective	.241	<b>.681</b>	-.025	.250	.136	.100
Deep-shallow	.065	<b>.667</b>	.262	.127	.108	-.153
Sufficient-insufficient	.223	<b>.645</b>	.139	.128	.051	.250
<b><u>FACTOR 3 SOCIABILITY</u></b>						
Unsociable-sociable	.204	-.055	<b>.773</b>	.028	.210	-.064
Colorless-colorful	-.041	.255	<b>.620</b>	.085	.188	.050
Weak-strong	.408	.195	<b>.613</b>	.190	.159	.174
Friendly-unfriendly	.281	.273	<b>.583</b>	.225	.091	.133
Interesting-uninteresting	.075	.366	<b>.549</b>	.182	.137	.398
Constrained-free	-.042	.136	<b>.518</b>	.429	.285	.077
<b><u>FACTOR 4 CLARITY</u></b>						
Readable-unreadable	.222	.131	.157	<b>.808</b>	.149	.148
Understandable-not understandable	.351	.180	.144	<b>.753</b>	.159	-.020
Unclear-clear	.420	.217	.353	<b>.545</b>	.095	.177
Useless-useful	.456	.254	.083	<b>.521</b>	.245	.178
Unimportant-important	.455	.128	.268	<b>.506</b>	.231	.131
<b><u>FACTOR 5 TIMELINESS</u></b>						
Fast-slow	.045	.089	.074	.048	<b>.812</b>	.168
Timely-untimely	.107	.083	.180	.139	<b>.794</b>	.129
Current-dated	.244	.071	.234	.139	<b>.773</b>	.185
Old news-breaking news	.087	.088	.197	.185	<b>.766</b>	-.040
<b><u>FACTOR 6 TECHNO-COMPLEXITY</u></b>						
Complicated-simple	.149	.014	.164	.197	.065	<b>.730</b>
Hi-tech-low tech	.055	.088	.010	.000	.348	<b>.669</b>

\* Adjective pairs means ranged from -2 to 2 with zero as midpoint.  
Cronbach Alpha coefficient for 33-item scale reliability = 0.9482.

## REFERENCES

- 
- <sup>1</sup> Matthew M. Reavy, *Introduction to Computer-Assisted Reporting: A Journalist's Guide* (Mountainview, Calif.: Mayfield, 2001).
- <sup>2</sup> Christopher Callahan, *A Journalist's Guide to the Internet: The Net as a Reporting Tool* (Boston: Allyn and Bacon, 1999).
- <sup>3</sup> See Michael Bugeja, "To E or Not to E," *Writer's Digest* (April 2003), 83, no. 4, 32-34, 59; Bruce Garrison, *Computer-Assisted Reporting*, 2<sup>nd</sup> ed., (Mahwah, N.J.: Lawrence Erlbaum Associates, 1999): 128-129; Bruce Garrison, "Journalists' Perceptions of Online Information-Gathering Problems," *Journalism & Mass Communication Quarterly* (Autumn 2000) 77, no. 3, 500-514; Houston, *Computer-Assisted Reporting*.
- <sup>4</sup> Russell Frank, "You've Got Quotes!" *Quill* (October 1999), 87, no. 7, 18-22.
- <sup>5</sup> Larry Pryor and Paul Grabowicz, "Privacy Disclosure on News Sites Low: Detailed Study Suggests New Media Needs to Work on Public Trust," *Online Journalism Review* (June 13, 2001), <<http://www.ojr.org/ojr/ethics/1017956628.php>>, accessed January 18, 2003.
- <sup>6</sup> Carl I. Hovland and Walter Weiss, "The Influence of Source Credibility on Communication Effectiveness," *Public Opinion Quarterly* (Winter 1951-52), 15, no. 4, 635-650; Werner J. Severin and James W. Tankard, *Communication Theories: Origins, Methods, and Uses in the Mass Media*, 4<sup>th</sup> ed. (New York: Longman, 1997).
- <sup>7</sup> Hovland and Weiss, "The Influence of Source Credibility."
- <sup>8</sup> Jack L. Whitehead, Jr. "Factors of Source Credibility," *Quarterly Journal of Speech* (February 1968), 54, no. 1, 59-63.
- <sup>9</sup> David K. Berlo, James B. Lemert, and Robert J. Mertz, "Dimensions for Evaluating the Acceptability of Message Sources," *Public Opinion Quarterly* (Winter 1969-70), 33, 4, 563-576.
- <sup>10</sup> Shawn Tseng and B.J. Fogg, "Credibility and Computing Technology," *Communications of the ACM* (May 1999), 42, no. 5, 39-44.
- <sup>11</sup> Thomas J. Johnson and Barbara K. Kaye, "Trusting the Media and 'Joe from Dubuque' Online: Comparing Internet and Traditional Sources on Media Credibility Measures," (paper presented to the Mass Communication and Society Division, Association for Education in Journalism and Mass Communication, Chicago, August 1997); Thomas J. Johnson and Barbara K. Kaye, "Cruising is Believing: Comparing Internet and Traditional Sources on Media Credibility Measures," *Journalism & Mass Communication Quarterly* (Summer 1998), 75, no. 2, 325-340.
- <sup>12</sup> Justin Mayo and Glenn Leshner, "Assessing the Credibility of Computer-Assisted Reporting," *Newspaper Research Journal* (Fall 2000), 21, no. 4, 68-82.
- <sup>13</sup> See Andrew J. Flanagan and Miriam J. Metzger, "Internet Use in the Contemporary Media Environment," *Human Communication Research* (January 2001), 27, no. 1, 153-181 and see Howard I. Finberg, Martha L. Stone, and Diane Lynch, "Digital Journalism Credibility," Online News Association, January 31, 2002, <<http://www.onlinenewsassociation.org/Programs/Research.htm>>, accessed January 18, 2003.
- <sup>14</sup> Flanagan and Metzger, "Internet Use," p. 153.
- <sup>15</sup> Flanagan and Metzger, "Internet Use," p. 153.

- 
- <sup>16</sup> Tseng and Fogg, "Credibility and Computing Technology."
- <sup>17</sup> Andrew J. Flanagin and Miriam J. Metzger, "Perceptions of Internet Information Credibility," *Journalism & Mass Communication Quarterly* (Autumn 2000), 77, no. 3, 515-540.
- <sup>18</sup> Wolfgang Schweiger, "Wer glaubt dem World Wide Web? Ein Experiment zur Glaubwürdigkeit von Nachrichten in Tageszeitungen und im World Wide Web," in P. Rossler (ed.) *Online-Kommunikation Beiträge zu Nutzung und Wirkung*, pp. 123-45, Opladen: Westdeutscher Verlag. 1998.
- <sup>19</sup> Berlinda Nadarajan and Penghwa Ang, "Credibility and Journalism on the Internet: How Online Newspapers Handle Errors and Corrections," paper presented to the Communication Technology and Policy Division, Association for Education in Journalism and Mass Communication, New Orleans, August 1999.
- <sup>20</sup> Nadarajan and Ang, "Credibility and Journalism on the Internet," p. 21.
- <sup>21</sup> S. Shyam Sundar, "Exploring Receivers' Criteria for Perception of Print and Online News," *Journalism & Mass Communication Quarterly* (Summer 1999), 76, no. 2, 373-386.
- <sup>22</sup> Sundar, "Exploring Receivers' Criteria for Perception of Print and Online News," p. 380.
- <sup>23</sup> Thomas J. Johnson and Barbara K. Kaye, "Trusting the Media..."; Thomas J. Johnson and Barbara K. Kaye, "Using is Believing: The Influence of Reliance on the Credibility of Online Political Information among Politically Interested Internet Users," *Journalism & Mass Communication Quarterly* (Winter 2000), 77, no. 4, 865-879.
- <sup>24</sup> Ekaterina Ognianova, "The Value of Journalistic Identity on the World Wide Web," paper presented to the Mass Communication and Society Division, Association for Education in Journalism and Mass Communication, Baltimore, August 1998.
- <sup>25</sup> Schweiger, "Wer glaubt dem World Wide Web?"
- <sup>26</sup> M.J. Robinson and Andrew Kohut, "Believability and the Press," *Public Opinion Quarterly* (Summer 1988), 52, no. 2, 188.
- <sup>27</sup> S. Shyam Sundar, "Do Quotes Affect Perception of Online News Stories?" paper presented to the Communication Technology and Policy Division, Association for Education in Journalism and Mass Communication, Anaheim, Calif., August 1996.
- <sup>28</sup> Spiro Kiouisis, "Public Trust or Mistrust? Perceptions of Media Credibility in the Information Age," paper presented to the Mass Communication and Society Division, Association for Education in Journalism and Mass Communication, New Orleans, August 1999.
- <sup>29</sup> Johnson and Kaye, "Cruising is Believing."
- <sup>30</sup> S. Shyam Sundar, "Effect of Source Attribution on Perception of Online News Stories," *Journalism & Mass Communication Quarterly* (Spring 1998), 75, no. 1, 55-68.
- <sup>31</sup> Sundar, "Exploring Receivers' Criteria for Perception of Print and Online News," p. 382.
- <sup>32</sup> Flanagin and Metzger, "Perceptions of Internet Information Credibility."
- <sup>33</sup> Tony Rimmer and David Weaver, "Different Questions, Different Answers? Media Use and Media Credibility," *Journalism Quarterly* (Summer 1987), 64, no. 1, 28-36.

---

<sup>34</sup> Dominic A. Infante, "The Construct Validity of Semantic Differential Scales for the Measurement of Source Credibility," *Communication Quarterly* (Spring 1980), 28, no. 2, 19-26.

<sup>35</sup> Ognianova, "The Value of Journalistic Identity on the World Wide Web."

<sup>36</sup> Wayne Wanta and Yu-Wei Hu, "The Effects of Credibility, Reliance, and Exposure on Media Agenda-Setting: A Path Analysis Model," *Journalism Quarterly* (Spring 1994), 71, no. 1, 90-98.

<sup>37</sup> Cecilie Gaziano and Kristin McGrath, "Measuring the Concept of Credibility," *Journalism Quarterly* (Autumn 1986), 63, no. 3, 451-462.

<sup>38</sup> Gaziano, "News Peoples' Ideology and the Credibility Debate."

<sup>39</sup> Infante, "The Construct Validity of Semantic Differential Scales."

<sup>40</sup> Shelly Rodgers, Glen T. Cameron, and Ann M. Brill, "This Page is Brought to You By ... : An Experimental Test of Sponsorship Credibility in an Online Newspaper," paper presented to the Advertising Division, Association for Education in Journalism and Mass Communication, New Orleans, August 1999.

<sup>41</sup> Johnson and Kaye, "Trusting the Media and 'Joe from Dubuque' Online: Comparing Internet and Traditional Sources on Media Credibility Measures"; Johnson and Kaye, "Using is Believing: The Influence of Reliance on the Credibility of Online Political Information among Politically Interested Internet Users."

<sup>42</sup> Sundar, "Do Quotes Affect Perception of Online News Stories?"

<sup>43</sup> Kiouisis, "Public Trust or Mistrust? Perceptions of Media Credibility in the Information Age."

<sup>44</sup> The demographics of this sample are similar to those of benchmark national studies of journalists in the past quarter century conducted by Johnstone, Slawski and Bowman (John W. C. Johnstone, Edward J. Slawski, and William W. Bowman, *The News People: A Sociological Portrait of American Journalists and Their Work* (Urbana: University of Illinois Press, 1976) and Weaver and Wilhoit (David Weaver and G. Cleveland Wilhoit, *The American Journalist in the 1990s* (Mahwah, NJ: Lawrence Erlbaum, 1996) and David Weaver & G. Cleveland Wilhoit, *The American Journalist: A Portrait of U.S. News People and Their Work* (Bloomington: Indiana University Press, 1986)). These studies found journalists in the U.S. to be in their mid 30s and male. However, the number of women entering the work force in journalism has increased in recent years and may not be reflected in earlier research.

<sup>45</sup> Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, *The Measurement of Meaning* (Urbana: University of Illinois Press, 1957).

<sup>46</sup> Tseng and Fogg, "Credibility and Computing Technology."

<sup>47</sup> Gaziano, "News Peoples' Ideology and the Credibility Debate"; Gaziano and McGrath, "Measuring the Concept of Credibility"; Rodgers, Cameron, and Brill, "This Page is Brought to You By ..."; Johnson and Kaye, "Trusting the Media and 'Joe from Dubuque' Online..."; Sundar, "Exploring Receivers' Criteria for Perception of Print and Online News"; Flanagan and Metzger, "Perceptions of Internet Information Credibility"; Rimmer and Weaver, "Different Questions, Different Answers?"; Ognianova, "The Value of Journalistic Identity on the World Wide Web"; and Wanta and Hu, "The Effects of Credibility, Reliance, and Exposure on Media Agenda-Setting".

<sup>48</sup> The scale introduction and instructions in the questionnaire were: Think about E-mail as a resource in gathering news. Please use an X or checkmark to indicate in the

---

spaces for each word pair how the words describe your beliefs about E-mail as a news resource:

<u>EXAMPLE</u> : Wet	_____	_____	<u>X</u>	_____	_____	Dry
<u>EXAMPLE</u> : Wet	_____	_____	_____	_____	<u>X</u>	Dry
<u>EXAMPLE</u> : Wet	_____	<u>X</u>	_____	_____	_____	Dry

<sup>49</sup> Anonymous, "Factor Analysis," in Anonymous, *SPSS Base 10.0 User's Guide* (Chicago, SPSS, Inc., 1999), pp. 323-334.

<sup>50</sup> See Jae-On Kim & Charles W. Mueller, *Factor Analysis: Statistical Methods and Practical Issues* (Beverly Hills, Calif.: Sage Publications, 1978); Denise F. Polit, *Data Analysis & Statistics for Nursing Research* (Stamford, Conn., Appleton & Lange, 1996); R. K. Rummel, *Applied Factor Analysis* (Evanston: Northwestern University Press, 1970); L.R. Tucker, R.F. Koopman & R.L., Linn, "Evaluation of Factor Analytic Research Procedures by Means of Simulated Correlation Matrices," *Psychometrika*, 34, (1969), 421-459.

<sup>51</sup> Janet Abbate, *Inventing the Internet* (Cambridge, Mass.: MIT Press, 2000); "Campaigns: What the Media Say: PC Party is a Damp Squib for the Press," *PR Week*, August 17, 2001, p. 9.