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ONLINE

Scholars Note 'Decay' of Citations to Online References

By SCOTT CARLSON

Michael Bugeja says that when he got his doctorate in English, he studied the difference between "fair" and "foul" copies of Shakespeare's plays -- a foul copy being rife with inaccuracies.

"That's because the medium of printing was unstable back then," says Mr. Bugeja, a professor of journalism and communication at Iowa State University.

Now that the Internet is the new unstable publishing medium, he and a colleague have studied how Web links stop working, or "decay," as those sites change addresses or shut down. They focused on links used by scholars in footnotes that cite Web materials.

After analyzing more than 1,126 citations that make reference to Web addresses, taken from online versions of five prestigious communication-studies journals, 373 of the links, or 33 percent, were found to be dead. Of the 753 of the links that worked, only 424 pointed to information pertinent to the citation.

Mr. Bugeja and Daniela Dimitrova, an assistant professor of communication at Iowa State, looked at footnotes from 2000 to 2003 in *Human Communication Research,* the *Journal of Broadcasting & Electronic Media,* the *Journal of Communication, Journalism & Mass Communication Quarterly,* and *New Media & Society.*

"The erosion of footnotes," Mr. Bugeja says, "might put us back to a curious situation, wondering whether we have a fair copy of a journal article or a foul copy of a journal article."

In some journals, the decay rate was particularly high. For example, of the 265 citations in *New Media & Society* articles that included links, 167 did not work.

Steve Jones, a professor of communication at the University of Illinois at Chicago who is an editor of "New Media & Society," called the decay of online citations "a real issue" that the journal has begun to examine.

He wonders whether copyright law might someday allow scholars to copy and archive online articles that they used as sources. But he says such a solution is "pie in the sky."

Anthony T. Grafton, a professor of history at Princeton University who has written a book about footnotes, has read a draft of the study and agrees that citation decay is "a real problem."

"I'm looking at a world in which documentation and verification melt into air," he says. He sees this

problem growing, as today's students rely more on online sources. "My students come to college less and less able to negotiate a book landscape and more and more adept at negotiating the Web."

Mr. Bugeja and Ms. Dimitrova are preparing their findings for publication and are coming up with a list of recommendations to stop the decay of online citations. Their findings and recommendations will be presented at the International Communication Association conference in May.

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