

◆ *Why Researchers Treat Online Journals Like Real People*

Speaker:

Clifford Nass
Stanford University
Stanford, California

Reporter:

Katherine Arnold
Journal of the National Cancer Institute
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There is little question that the opportunities offered by the World Wide Web will change the journal-publishing industry dramatically, perhaps most in ways that are yet to be invented. The technologic advantages of online journals include their ease of accessibility, adaptation to users' needs, and equalization among countries.

However, "the picture is much more complicated when we look at online journals from a psychologic perspective rather than from a pure technologic perspective", said Clifford Nass, associate professor of communications at Stanford University, in his keynote address. He highlighted six ways in which psychological aspects of computer-user interactions can affect how online journals are conceptualized and designed.

First, Nass looked at the simple task of asking readers how they like a particular online journal. As background he noted that when one person asks for evaluation by another person, the answers tend to be more positive. People tend to be polite when directly evaluating others, so will they be polite if a computer asks users about itself?

To answer that, Nass and his colleagues asked a group of online readers a series of questions about a particular Web site. Readers responded to questions either on the computer on which they viewed the site, on a different computer, or on a paper survey. The responses were significantly more positive when answered on

the computer that asked questions about itself than when answers were collected on a separate computer or in the paper survey. But users denied being influenced by the computer itself and denied "being polite". That implies that people treat the computer as another person; these social responses are automatic and unconscious. From this Nass suggested that evaluation information should be collected on a Web site that looks different from the journal site, perhaps with different graphics and different fonts.

This experiment leads to the development of a new paradigm: A person's interaction with computers and Web sites is fundamentally social. "The human brain is not evolved for 20th-century media", Nass said. "New media lead 'old' brains to apply social rules and heuristics."

In a second experiment, Nass proved the paradigm by showing how the reputation of a technology can affect attitudes and perceptions of the information delivered. Watching television has the reputation of being a leisure activity, and computers are associated with information delivery. Users were asked to view a portion of the Charles Schwab & Co Inc Web site or a series of "Saturday Night Live" comedy skits on a box labeled either "television" or "computer".

Users rated the "intelligence" of the Schwab Web site higher when they viewed it on a computer screen than on a television screen, and the "Saturday Night Live" skits were rated more humorous when viewed on a television screen than on a computer screen. That implies that users can perceive a Web site's content differently depending on the medium on which they view it.

Aside from the look of the medium, the sound can affect a user's perception of the product. Does it matter what the voice sounds like? In a third experiment, two groups of people, introverts



and extroverts as classified by the Myers-Briggs Type Indicator, were asked to view a book-purchase Web site that had either an extroverted or introverted synthesized voice. Nass found that extroverts bought more books when the synthesized voice was extroverted and introverts tended to buy more books when the voice was introverted. Extroverts also classified the site with the extroverted voice as of higher quality and more credible, and introverts found the site with the introverted voice to be of higher quality and credibility.

To Nass, that shows that similarity-attraction is a powerful effect, and computers have an effect on people despite an obvious nonhuman trait (a synthesized voice). It suggests that a journal that is considering using voice features should "cast" the sound of the voice. It also raises questions: Should British journals have British narrators? Should Japanese journals written in English have Japanese narrators? What sex should the voice be?

Beyond synthesized voices, Internet technology can offer personalization and adaptation to a user's habits. Nass tested that in his fourth experiment by giving an examination to two groups of people—those who were confident in their previous performance on the examination and those who were not confident. Half the people

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in each group were told that the test was adapting to their answers and half were told that the test asked the same questions of everyone. Confident people did less well when they thought that the computer was adapting to them, and nonconfident people did better when they thought that the test was adapting to them. Nass noted that this shows that adaptation is psychologically powerful.

There are also issues with personalizing Web sites, such as those that gather information about what a user reads on a site. Do you tell readers that you are gathering information about them or not? This has social implications that must be considered.

In his final two experiments, Nass revealed important information about

cultural differences and the psychology of self-disclosure. First, he found that individualistic versus collectivist cultures can respond differently when asked the same questions and he showed that Web sites are capable of eliciting moral obligations; that is, user-friendly Web sites are more likely to be revisited than sites that are not.

Second, in an experiment to determine the best way to get thorough answers from a computer user, he found that a computer that prompted users with disclosures about itself yielded longer and more detailed responses. That indicates that reciprocity is a very strong impulse, and Web sites that gather information should also provide information to get the most honest answers possible.

All the experiments show the importance of the psychological perspective regarding online technologies, said Nass. "The human-to-online journal relationship is fundamentally social, and these responses are automatic, commonplace, and incurable." He added that the responses can lead to numerous unexpected consequences, direct means of verification, and critical implications for design.

"The design of online journals looks very different when we think of journals as socially interactive instead of mere presenters of information", he concluded. 



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