

E-mail Reveals Your Closest Friends

by Jon Cartwright on 30 November 2011, 12:00 PM

It's not surprising that someone could guess your friends simply by peeking at your e-mail. But a more detailed look at your electronic communications could reveal which friends are closer to you than others, according to a new study.

In recent years, researchers have come up with several methods to suss out personal relationships from e-mails without actually reading the messages themselves. One is to set a volume threshold: If a person sends e-mails to someone else more than, say, 30 times over 6 months, the two people are probably well acquainted—that is, they are probably in each other's social network. Another tack is to ignore the volume of e-mail and simply look at whether a letter elicits a response.

Complex-systems analysts Brian Uzzi and Stefan Wuchty of Northwestern University in Evanston, Illinois, have now pitted these methods against each other. They took all the e-mail data from an international firm and for one of its offices asked employees to list the people in their social network, dividing the list into friends, colleagues, and acquaintances. Then Uzzi and Wuchty scanned the workers' e-mails, for each recording sender and receiver, the time it was sent, and the time it took for the receiver to respond.

The researchers found that both methods—the volume threshold and the response criterion—did a fair job of approximating the social networks the employees had reported themselves. But then Uzzi and Wuchty tried something new. Instead of looking at the absolute values for volume and response, they looked at the response time—that is, the time it took for a sender to respond to e-mails from different contacts.

[The new method predicted who was in different employees' social networks with an accuracy that is several percent higher than the other methods](#), the duo report online this month in *PLoS ONE*. What's more, by examining precisely who had the different response times—friends, colleagues, or acquaintances—Uzzi and Wuchty uncovered a more telling pattern. It turned out that the fastest responses went to friends and that the slowest responses went to acquaintances, with colleagues somewhere in between. Having established this, the researchers could use the response times to predict who was a friend, colleague, or acquaintance without checking the employee survey at all.

According to Uzzi, it should be possible to go a step further and rank a person's friends just by peeking at their inbox and outbox and seeing who gets the fastest responses. Such information could be valuable to companies, he says, because they would be able to focus advertising on tight-knit groups of friends, among whom new advertising messages quickly build momentum. "We're often influenced by our peers; we take their actions as an indicator of what we should

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do," Uzzi says. "Once you know what the relationships are, you might be able to target [advertising at] a critical mass of them."

Computer scientist Karrie Karahalios of the University of Illinois, Urbana-Champaign, says the study would have been better if it could have taken into account more than e-mail. She points out that many people use other methods of communication besides e-mail, such as Facebook and Twitter, as well as simply chatting over the phone or speaking face to face. "Just looking at e-mail may have some bias," she adds. "That said, it is a very good way to start."