Tracking the digital traces of social networks

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Why do we create and maintain social networks? Most people can immediately think of a few natural reasons -- we get something from the interaction, or the person is nearby and is close to us in proximity, age or gender.

But researching such theories on a large scale has never before been possible -- until digital social networks came along.

Noshir Contractor, the Jane S. and William J. White Professor of Behavioral Sciences at the McCormick School of Engineering and Applied Science at Northwestern University, has studied the massive online virtual world Second Life to test whether these and other social theories are true.

Contractor will discuss his results in a presentation titled "Digital Traces: An Exploratorium for Understanding and Enabling Social Networks," which will be part of the "Interdisciplinary Approaches to the Study of Large-Scale Human Networks" symposium at the American Association for the Advancement of Science (AAAS) Annual Meeting in Chicago.

Second Life, where more than 15 million accounts are registered, differs from other massive online multiple-player games in that there is no real goal -- people create virtual avatars of themselves and then chat with other people, and buy and sell items.

But in order to make it safe for minors, Second Life created Teen Grid, where only teenage players can socialize. But how successful could such

a world be? Linden Lab, the makers of Second Life, contacted Contractor and his collaborators to find out.

"Among other questions, they wanted to learn how networks might help identify potential troublemakers within that context," Contractor says. In return, Contractor and his colleagues got access to huge amounts of data that give them a way to answer how the networks were created.

"We wanted to ask basic questions about communication theory -- to what extent are people joining groups because their friends are part of the group? To what extent are they becoming friends with people in the groups they've joined? We don't have good ways of tracking that in the real world."

So searching through vast amounts of anonymized data, Contractor and his collaborators found that teens had online friendships that were disproportionately with people in their immediate geographic area -- likely with people they already knew.

"That finding really went against a lot of the media hype," Contractor said. "People were worried about helpless teenagers talking with strangers, but that is not what we found. This is the first time this has been based on solid evidence."

Teenagers also tended to be friends with the friends of their friends, not with people who weren't part of their network already, the researchers found.

When teenagers turn 20, they must leave the Teen Grid of Second Life and go on to the regular Second Life, leaving their entire network of friends behind.

"This provides a nice natural experiment to see the transition of being

suddenly severed from one network and being introduced to another," Contractor says.

Contractor continues to research virtual worlds like Second Life and hopes to continue testing these social theories.

"What we've found so far is that technology isn't changing our networks -- it's reinforcing them," he says.

Source: Northwestern University