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Do I know you? Memory patterns help us recall the social webs we weave, study finds

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With a dizzying number of ties in our social networks – that your Aunt Alice is a neighbor of Muhammad who is married to Natasha who is your wife's boss – it's a wonder we remember any of it. How do we keep track of the complexity? We cheat, says a Cornell University sociologist in *Scientific Reports* (March 21).

Humans keep track of social information not by rote memorization but with simplifying rules, as you might remember a number sequence that always increases by two, according to author Matthew Brashears, assistant professor of sociology. People recall social ties that both involve at least three people who know each other and kinship labels such as "aunt" twice as well as they remember ties that do not, even though triad kinship networks are far more complex, he said.

"Humans are able to manage big, sprawling, complicated social networks essentially because we don't remember big, sprawling, complicated social networks. We remember simplified, regular structures that bear a reasonable similarity to what those networks look like," Brashears said. In cases where the relationships don't fit the pattern, we remember the pattern and the few exceptions, instead of remembering all the ties simultaneously, he added.

About 300 study participants read paragraphs describing a group of people and how they relate to each other. Some paragraphs included kinship labels and some didn't. Other paragraphs included closed triads – where three people each know each other – while other paragraphs did

not. The participants were then asked to recall as many of the ties as possible.

When the paragraphs contained both kinship labels and closed triads, the participants' recall improved by 50 percent compared with participants whose paragraphs included neither – even though the kinship and triad paragraphs contained nearly twice as many relationships.

"That's a pretty substantial improvement," Brashears said. Moreover, participants did worse when trying to recall paragraphs that had kin relationships but no triads. "It's like trying to remember a random number sequence by using the 'increase by two' rule," he said.

The study helps explain how humans actively manage so many more social ties compared with other primates – a key question in the field of sociology. The answer is that we evolved the capacity to spot and use social patterns.

"Our ability to remember and manage socials ties – and build bigger groups of people – had to do with coming up with new and interesting ways of compressing that information. It's about how we structure our groups and how that allows us to remember them, as opposed to just sheer cognitive horsepower," he said.

The research may help also explain some peculiarities of human networks, such as transitivity: If George is my friend and Susan is my friend, then Susan and George are likely to be friends. Brashears suspects that some social networks are easier to remember than others, and individuals who build groups that conform to those rules were more evolutionarily successful.

"Some of the reasons why human networks look the way they do is because they have to, in order for us to process them, to manage it

cognitively," he says.

Medical researchers may benefit from the research as they seek to understand why some people don't grasp social intricacies as well as others. "We may have a better ability to understand social anxiety and autism spectrum if we understand how we're compressing and reconstructing social information using these mechanisms," Brashears said.

More information: Paper: http://www.nature.com/srep/2013/130321/srep01513/full/srep01513.html

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