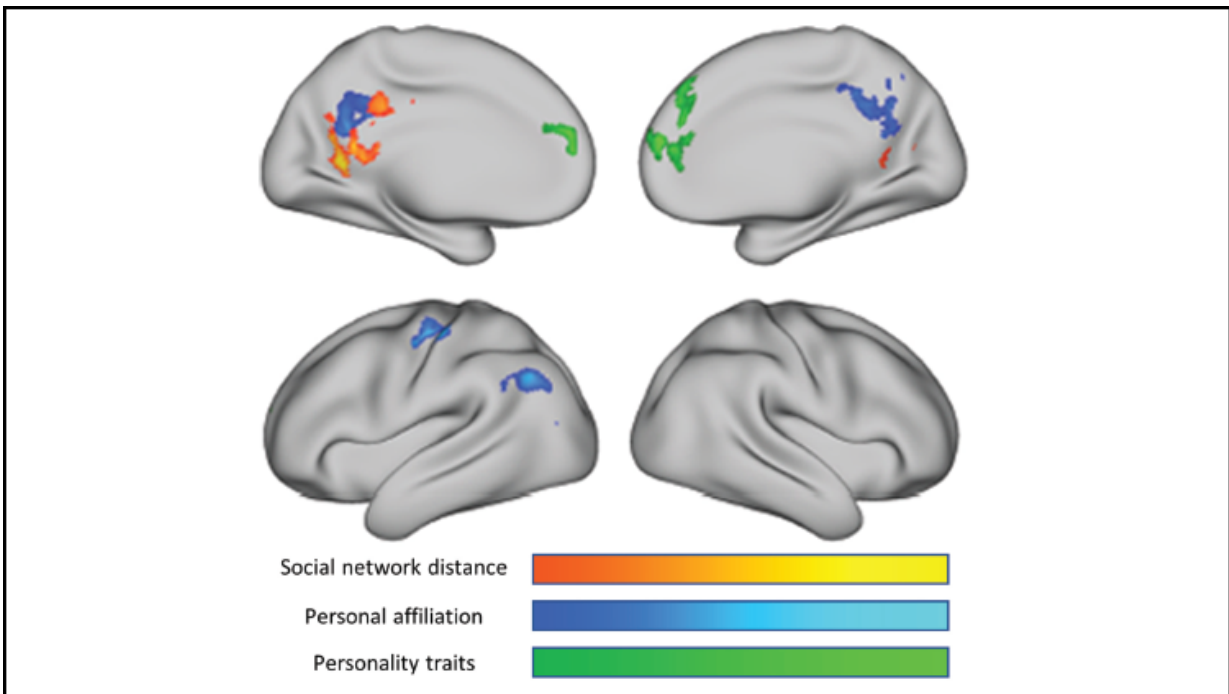


How the brain encodes social network structure

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Along the medial wall, activity pattern similarity in the medial parietal lobe represented information on the social network distance between individuals and their personal affiliation to the participant, while pattern similarity in the medial prefrontal cortex was correlated to similarity between individuals in their perceived personality traits. Credit: Peer et al., *JNeurosci* 2021

The brain encodes information about our relationships and the relationships between our friends using areas involved in spatial

processing, according to new research published in *JNeurosci*.

Humans maintain hundreds of [social relationships](#), requiring the brain to catalogue countless details about each person and their connections to other people. But it is not known how exactly the brain stores all of this information.

To uncover how the brain encodes social network structure, Peer et al. used Facebook data to map out participants' social connections. Then the researchers measured their [brain activity](#) with fMRI as they thought about people from their network. Thinking about a connection generated a unique activity pattern in the retrosplenial complex, a brain region involved in processing [spatial information](#). The "distance" between two people in the social network was reflected by the similarity between the activity patterns. Closer people—indicated by number of mutual friends—had similar activity patterns, while more distant people had dissimilar patterns. Information about each connection's personality was encoded in the [medial prefrontal cortex](#); people with similar personalities elicited similar activity patterns.

These results indicate the brain separates different aspects of social knowledge into unique representations.

More information: Brain Coding of Social Network Structure, *JNeurosci* (2021). [DOI: 10.1523/JNEUROSCI.2641-20.2021](https://doi.org/10.1523/JNEUROSCI.2641-20.2021)

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