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Tara Parker-Pope on Health

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Love on the Global Brain

By [TARA PARKER-POPE](#)

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Brain scan studies have shown that early romantic love generates a unique pattern of brain activity. Regions of the brain related to addiction and even mental illness light up on the scan when a person sees a photo of his or her beloved.

But most of the research has been conducted in Western cultures like Britain and the United States. So researchers at Stony Brook University in New York wanted to know if the chaos of romantic love translates across cultures. For instance, does a Chinese brain look the same as an American brain when it's in love?

There are reasons to think that culture and country influence how we love — or at least how we express it. For instance, in surveys, people from China typically describe romantic love “in much less positive terms,” notes Art Aron, a professor of psychology at Stony Brook who has conducted several love and brain scan studies.

“In a culture with a tradition of arranged marriages where romantic love is disruptive, questionnaire studies do suggest there might be differences,” Dr. Aron notes. “Romantic love is not entirely a great thing even for us. It has a tragic and dark side if you fall in love and the person doesn't love you back or you're in a relationship with someone else.”

When people in China talk about love, they often “tend to pick more negative traits, words like anxious, scary and depressing,” explained Dr. Aron. “Americans will also list some negative emotions, but the proportion of negatives is much higher for the Chinese.”

So when one of Dr. Aron's graduate students, Xiaomeng Xu, decided to spend part of the summer in China, the team arranged to study the brains of Chinese citizens who reported being newly in love. The findings are reported online [in the journal Human Brain Mapping](#).

They discovered that cultural differences in how love is expressed don't change the brain's neurological reaction to romantic love. The scans showed that love lights up the brain in the same manner, regardless of ethnic background.

“This measure doesn't depend on culture,” Dr. Aron explained. “We were able to replicate

[The Science of Relationships](#)

The study of love, marriage and couples.

- [The Science of Commitment](#)
- [Is Marriage Good for You?](#)
- [When Desire Fades](#)
- [Lessons from Same-Sex Couples](#)

our findings in a culture where everyone thought love would be the most different.”

To study love on the brain, men and women are placed in brain scan machines and shown pictures of their loved ones. They also see pictures of a familiar friend about whom they don't have romantic feelings. Just as in the studies of love in the United States, the photo of the loved one evoked a unique pattern of neural activation in the area of the brain associated with intense reward — similar to the patterns shown when people take addictive drugs or gamble.

In the China study, the researchers took the additional step of tracking the relationships for 18 months. They then asked the couples to describe the relationship on a seven-point scale. Although all the remaining participants were happy together, some of them scored the relationship a 6, while others rated it a 7. Going back to the original scans, the researchers found distinct differences in the brain patterns among those who had the highest relationship satisfaction compared to those who gave slightly lower scores.

“To our delight we got some very clear patterns there,” Dr. Aron said. “We checked to see whether any plausible area of the brain would predict that, and we got a very strong result.”

Dr. Aron cautions that the findings are exploratory and need to be replicated. But the work suggests, for the first time, that the intensity of brain patterns during the early phase of romantic love may be able to predict the quality of the relationship 18 months into the future.

“I think what we take away from this is that love is not merely a cultural construction,” Dr. Aron said. “What the study does suggest is that love is a powerful force in human life. What is going on at the deep level of the brain is pretty much the same everywhere. But of course how we talk and think about it, what we do to show it to others, etc., may well be shaped by culture.”