Social Connection Makes a Better Brain
Recent trends show that people increasingly value material goods over relationships—but neuroscience and evolution say this goes against our nature.

EMILY ESFAHANI SMITH | OCT 29 2013, 1:00 PM ET

Matthew Lieberman, a distinguished social psychologist and neuroscientist, basically won the lottery. This past summer, he was offered three million dollars for an academic position—one million in raw income and two to do lab research. That’s a king’s ransom for a psychology professor. On average, psychology professors make less than six figures and rely on a patchwork of modest grants to sustain their research. All Lieberman had to do was spend four months this year and next year in Moscow, a nice enough city, doing some research—which he would have done anyway at home at UCLA.

But there was a catch. He would have to be away from his wife Naomi and seven-year-old son Ian for those eight months. They could not join him in Moscow. He had a basic trade-off problem, one that kept him up for many nights: Should I take the money and give up those eight months with my family or should I stay home and give up the money and research opportunities? In one form or another, we’ve all faced this dilemma, if on a more modest scale. Do you work late tonight or join your family for dinner? Do you go to the conference or to your friend’s wedding? Do you prioritize your career or your relationships?

Lieberman’s new book Social: Why Our Brains Are Wired to Connect hits the shelves this month. It’s a book about relationships and why relationships are a central—though increasingly absent—part of a flourishing life. Lieberman draws on psychology

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Social Connection Makes a Better Brain - Emily Esfahani Smith

One of the most exciting tidings to emerge from neuroscience in recent years underlines the brain’s inherently social nature. When neuroscientists monitor what’s going on in someone’s brain, they are typically interested in what’s going on in it when people are doing something active, like solving problems or reaching for an apple. But what happens when the brain is at rest? Every so often, the brain takes a break between two tasks, and neuroscientists have noticed that during this restful state, something remarkable happens: the brain’s default network comes online automatically.

The default network, according to neuroscientists like Harvard’s Richard Davidson, is the brain’s “vastsystem” that’s activated during non-active moments. When we’re chilling out and the brain is doing nothing in particular, the default network is what’s going on in it. This network is “the underpinning of the social self,” according to Harvard neuroscientist Nancy C. Andreasen.

A combination of three separate photographs show the skull of a Homo heidelbergensis, dated at 400,000-700,000 years ago in Africa. Known as Homo heidelbergensis, they are believed to be the ancestors of Homo sapiens and the Neanderthals. Reversely, they appear to be the first hominids to have had division of labor (they worked together to hunt), central campsites, and they may have been the first to bury their dead. (Sponsored)

Scientists have debated this question for a long time, but the research of anthropologist Robin Dunbar is fairly conclusive on this point. Dunbar has found that the strongest predictor of a species’ brain size is the size of its social group. Scientists think the first hominids with brains as large as ours appeared about 600,000-700,000 years ago in Africa. Known as Homo heidelbergensis, they are believed to be the ancestors of Homo sapiens and the Neanderthals. Reversely, they appear to be the first hominids to have had division of labor and may have been...
Research shows that it looks almost identical to another brain configuration—the one used for social thinking or “making sense of other people and ourselves,” as he writes: “The default network directs us to think about other people’s minds—their thoughts, feelings, and goals.” Whenever it has a free moment, the human brain has an automatic reflex to go social. Why would the brain, which forms only 2 percent of our body weight but consumes 20 percent of its energy, use its limited resources on social thinking, rather than conserving its energy by relaxing?

“Evolution has made a bet,” Lieberman tells me, “that the best thing for our brain to do in any spare moment is to get ready for what comes next in social terms.”

Evolution only makes bets if there are payoffs—and when it comes to being social, there are many benefits. Having strong social bonds is as good for you as quitting smoking. Connecting with other people, even in the most basic ways, also makes you happier—especially when you know they need your help.

One study of adults found that the brain’s reward center, which turns on when people feel pleasure, was more active when people gave $10 to charity than when they received $10. In another study, comforting someone in distress activated the reward center in a powerful way. Couples were brought into the lab and the girlfriend was placed inside a brain scanner while the boyfriend sat in a chair right next to her. In some cases, the boyfriend would receive a painful electrical shock. The girlfriend, who knew when her boyfriend was being shocked, was instructed to either hold her boyfriend’s hand or to hold onto a small ball. When the scientists looked at the girlfriend’s brain activity, they found that her reward system was active when she was holding the hand of her boyfriend both when he was being shocked and when he wasn’t in pain—but it was most active when she held his hand as he was being shocked. Holding your boyfriend’s hand feels nice, but it’s especially meaningful when you know that he needs your love and affection.

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When economists put a price tag on our relationships, we get a concrete sense of just how valuable our social connections are—and how devastating it is when they are broken. If you volunteer at least once a week, the increase to your happiness is like moving from a yearly income of $20,000 to $75,000. If you have a friend that you see on most days, it’s like earning $100,000 more each year. Simply seeing your neighbors on a regular basis gets you $60,000 a year more. On the other hand, when you break a critical social tie—here, in the case of getting divorced—it’s like suffering a $90,000 per year decrease in your income.

You don’t have to be a social scientist to know how badly a breakup hurts. One of Lieberman’s most provocative studies, done in collaboration with his wife Naomi Eisenberger, shows that social loss and rejection are more painful than we might realize. The researchers put people in a brain scanner and then had them play an Internet video game called Cyberball where three people toss a ball around to each other. The research subjects were led to believe that the other people in the game were also part of the study when in fact they were just two pre-programmed avatars.

The point of Cyberball is to make the player (the research subject) feel rejected. At first, all three players toss the ball to each other in turn. But at a certain point,
The most interesting part of the study is how their brains processed the social rejection. To the brain, social pain feels a lot like physical pain—a broken heart can feel like a broken leg, as Lieberman puts it in his book. The more rejected the participant said he was by the monkey, the more activity in the part of the brain that processes the distress of physical pain.

In a follow-up study, participants were called into the lab and, like the last time, played a computer game in the brain scanner. But this time, there was a twist. Before they came into the lab, half of them had taken Tylenol every day for three weeks while the other half had taken a placebo. What the researchers found in this study was remarkable: the placebo group felt just as rejected and pained as those in the initial study, but the people in the Tylenol group were totally immune to the social pain of feeling left out.

I enjoyed the article. We need to study the brain more. I can think of few things that are more deserving of study. It is frustrating that we do not know more.

Studies are no doubt provocative and counter-intuitive. A broken leg and a broken heart seem like very different forms of pain. But there are evolutionary reasons why our brains process social pain the way they process physical pain. Pain is a signal that something is wrong. Social pain signals that we are all alone—that we are vulnerable—and need to either form new connections or rekindle old ones to protect ourselves against the many threats that are out there.
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