Before I wrote this article, I went through two stages. In the first stage, I cruised the academic journals for interesting papers. Once I found a study that grabbed me, I entered phase two: I figured out how in the world to communicate the essence of the findings to a broad audience in a comprehensible, interesting, and relatable way without skimping on the science. Not so easy. What was happening in my brain during each of these stages? Can the pattern of neurons firing in my brain predict how much this article will be retweeted on twitter?

A recent study conducted by Emily Falk, Matthew Lieberman, and colleagues gets us closer to answering these important questions. The researchers recruited

undergraduate participants and randomly assigned them to two groups: the “interns” and the “producers.” The 20 interns were asked to view ideas for television pilots and provide recommendations to the 79 producers about which shows should be considered for further development and production. All of the interns had their brains scanned by fMRI while they viewed the videos, and they were then videotaped while they discussed the merits of each pilot show idea. The producers rated which ideas they would like to further recommend. How was neural activity related to the spread of ideas?

The ultimate success of an idea being recommended by the producers (“the buzz effect”) was predicted by neural activity among the interns while they were initially considering show ideas. The most predictive neural activity was associated with reward processing (ventral striatum [VS]) and the ability to simulate the minds of others (temporoparietal junction [TPJ] and dorsomedial prefrontal cortex [DMPFC]).

This suggests that the successful propagation of ideas involves the anticipation of pleasure in sharing the idea with other people, as well as thinking about how other minds will respond to the message. How does neural activity relate to these various stages? The researchers isolated the moment in which the interns stated their intention to recommend an idea (“The intention effect”) and found this stage was associated with neural activations in brain areas commonly associated with self-relevance processing (medial prefrontal cortex [MPFC] and precuneus/posterior cingulate cortex [PC/PCC]).

This suggests that personal preferences played a crucial role in the selection of pilot

television shows. But personal preferences alone weren’t enough to explain social influence. Some interns were much better than others at influencing the producers (“The salesman effect”). The only brain region that successfully differentiated the more successful social influencers from the less successful influencers was the temporoparietal junction [TPJ].

Since this neural region is frequently associated with the ability to simulate the minds of others (“mentalizing”), it appears that effective social influencers are more likely to spontaneously think about how to communicate the information to others in a useful and interesting way during the encoding stage, rather than merely anticipating that viewers will find the information pleasurable.

As the researchers note, these findings have a number of important implications for the spread of ideas, norms, values, and culture. For one, it appears that the spread of ideas depends on the messenger’s social-cognitive abilities, affect, and motivations, and less on IQ-type intelligence. None of the stages involved in social influence recruited brain regions typically associated with higher-level abstract reasoning and executive functioning (the frontal-parietal brain network).

These findings also add to an emerging literature on the link between mentalizing and social communication more generally. For instance, Greg Stephens and colleagues recorded the brain activity from speakers and listeners during natural verbal communication and found that when the listener’s brain activity in the default mode network mirrored the speaker’s brain activity, there was greater communication and understanding between both of them. Many of the key regions of the default mode network were also active in the study conducted by Falk and colleagues, including the medial prefrontal cortex and the precuneus/posterior cingulate cortex.

This line of research is important, and further work may help us better understand the evolution of human social cognition, the role of the mentalizing brain network in preparing for social interactions, and how the ability to spread information relates to social identity, builds social status, and strengthens social ties.

Personally, I’d just like to know just how active my mentalizing network was while I was writing this article. I guess we’ll find out by how many likes I get on facebook.

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Image credit: PlayGen
About the Author: Scott Barry Kaufman, Ph.D. is a cognitive psychologist interested in the development of intelligence and creativity. He applies a variety of perspectives to come to a richer understanding and appreciation of all kinds of minds and ways of achieving greatness. He is adjunct assistant professor of psychology at New York University, author of Ungifted: Intelligence Redefined, and co-founder of The Creativity Post. Follow on Twitter @sbkaufman.

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The views expressed are those of the author and are not necessarily those of Scientific American.

Tags: default mode network, Emily Falk, Greg Stephens, influence, medial prefrontal cortex, mentalizing, neuroscience, posterior cingulate cortex, precuneus, social, social influence, temporoparietal junction

2 Comments

1. tuned
12:04 pm 07/9/2013

Obviously the “neuroscience”, as well as the liberal social policies are disastrous failure to date. Proof is the dozens of million that have died of AIDS/HIV alone. Then there are the others such as STDs, meningitis, hepatitis, TB, etc. Contraceptives have a 15% failure rate from manufacturers data. Therefore every million sex acts can produce 150,000 cases of AIDS, etc. even WITH contraception. Epidemic, 50K new cases of HIV this year in U.S. itself. Abstain never fails to protect people from disease spread and unwanted pregnancies. Only failing to abstain causes those. The next sane solution is monogamy with blood tests. (that’s why marriage used to require it).

Link to this

2. zstansfi
12:05 pm 07/9/2013

Hi Scott,