Tali Sharot – The Influential Mind

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„On the evening of September 16, 2015, at around eight p.m., I was sitting on the sofa in my living room watching the second Republican primary debate on CNN. The 2016 presidential race was one of the most interesting in history, full of unexpected plot twists and surprises. It also turned out to be a mesmerizing study of human nature.

Center stage at the Ronald Reagan Presidential Library, in Simi Valley, California, were two of the leading cadidates: pediatric neurosurgon Ben Carson and real estate mogul Donald Trump. In between discussions about immigration and taxes, the debate turned to autism.

„Dr. Carson,“ began the moderator, „Donald Trump has publicly and repeatedly linked vaccines, childhood vaccines, to autism, which, as you know, the medical community adamantly disputes. You’re a pediatric neurosurgeon. Should Mr. Trump Stopp saying this?“

„Well, let me put it this way,“ replied Dr. Carson. „There have been numerous studies, and they have not demonstrated that there is any correlation between vaccinations and autism.“

„Should he Stopp saying that the vaccines cause autism?“ asked the moderator.

„I’ve just explained it to him. He can read about it if he wants to. I think he’s an intelligent man and will make the correct decision after getting the real facts,“ said Dr. Carson.

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„I’d like to respond,“ said Trump. „Autism has become an epidemic, ... It has gotten totally out of control ... You take this little beautiful baby, and you pump – I mean, it looks just like it’s meant for a horse, not for a child. And we’ve had so many instances, people that work for me. Just the other day, two years old, two and a half years old, a child, a beautiful child, went to have the vaccine, and came back, and a week later got a tremendous fever, got very, very sick, now is autistic.“ (1)

My response was immediate and visceral. An image of a nurse inserting a horse-sized syringe into my tiny baby emerged inside my head and would not fade away. It did not matter that I knew perfectly well that the syringe used for immunization was the normal size – I panicked.

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It made no sense. At one podium was a pediatric neurosurgeon whose ammunition included peer-reviewed medical studies and years of clinical practice; at the other was a businessman whose arguments boiled down to a single oberservation and intuition. Yet despite my years of scientific training, I was convinced by the latter. Why?

I knew exactly why. And it was that understanding that brought me back to reality.

While Carson was targeting the „cerebral“ part of me, Trump was aiming at the rest of me.

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Trump tapped into my very human need for control and my fear of losing it. He gave me an example on somenone else’s mistake and induced emotion, which helped align the pattern of activity in my brain with his, making it more likely that I would take on his point of view. Finally, he warned of the dire consequences of not following his advice. ...

(1) „CNN Reagan Library Debate: Later Debate Full Transcript,“ September 16, 2015, http://cnnpressroom.blogs.cnn.com/2015/09/16/cnn-reagan-library-debate-later-debate-full-transcript/.

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The fact of the matter is that people love propagating information and sharing opinions. You can sees this clearly online: every single day, four million new blogs are written, eighty million new Instagram photos are uploaded, and 616 million new tweets are released into cyberspace. That is 7,130 tweets per second. Behind every tweet, blog, and uploaded photo is a human being like you and me. Why do millions of humans spend millions of precious moments every day sharing information?

It appears that the opportunity to impart your knowledge to others in internally rewarding. A study conducted at Harvard University found that people were willing to forgo money so that their opinions would be broadcast to others. (2) Now, we are not talking about well-crafted insights here. These were people’s opinions regarding mundane issues, like whether Barack Obama enjoys winter sports and if coffee is better than tea. A brain-imaging scan showed that when people received the opportunity to communicate their pearls of wisdom to others, their brain’s reward center was strongly activated. We experience a burst of pleasure when we share our thoughts, and this drives us to communicate. It is a nifty feature of our brain, because it ensures that knowledge, experience, and ideas do not get buried with the person who first had them, and that as a society we benefit from the products of many minds.

Of course, in order for that to happen, merely sharing is not enough. We need to cause a reaction – what Steve Jobs aptly referred to as making a „dent in the universe.“ Each time we share our opinions and knowledge, it is with the intention of impacting others. The intended change can be large or small. Perhaps our aim is to raise awareness for a social cause, increase sales, alter the way people view the arts or politics, improve the way our child eats, sway people’s perception of ourselves, imporve people’s understanding of how the world works, increase our team’s productivity, or maybe just convince our spouse to work less and join us on a tropical vacation.

Her eis the problem, though: we approach this task from inside our own heads. When attempting to create impact, we first and foremost consider ourselves. We reflect on what is persuasive to us, our state of mind, our desires, and our goals. But, of course, if we want to affect the behaviours and beliefs of the person in front of us, we need to first understand what goes on inside *their* head and go along with how *their* brain works.

(2) Diana I. Tamir and Jason P. Mitchell, „Disclosing Information About the Self Is Intrinsically Rewarding,“ *Proceedings of the National Academy of Sciences* 109, no 21 (2012).

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The Amygdala of the Internet

As it turns out, we do not even need to observe people for their emotions to ripple in. Posts on social media will do the trick. Take an infamous Facebook experiment. (5) In January 2012, Facebook manipulated the news feeds of over hals a million users so that some users saw a large number of positive posts in their feed, while others encountered a large number of negative posts. The Facebook researchers found that users who saw more positive posts, such as images of people embracing, posted more positive messages themselves. Those who saw more negative posts, such as complaints about service in a restaurant, created more negative posts on their wall. True, we do not know how the people who posted were feeling, but we can say that positive and negative messages travel fast online. The experiment did not go down well with Facebook users, who were angry that the company experimented on them without their knowledge.

A couple of years later, another group of researchers decided to prove the same point, this time with Twitter. (6) To avoid the ethical issues present in the Facebook experiment, they simply observed people’s feeds instead of manipulating them. This setup does not allow for conclusions about cause and effect. However, the researchers found that when a person posted en uplifting tweet, their feed just prior probably included about 4 percent more positive tweets than negative. If a person posted a downer, their feed just prior probably had about 4 percent more negative tweets that positive.

If you are an avid Twitter user, beware: tweeting is one of the most emotionally arousing activities you likely engage in on most days. Forget exercise – studies show that tweeting raises your pulse, makes you sweat, and enlarges your pupils – all indicators of arousal. (7) Relative to just browsing the Web, tweeting and retweeting enhances brain activity indicative of emotional arousal by 75 percent. Simply reading your feed increases your emotional arousal by 65 percent. \* I’d always suspected that Twitter was the „amygdala of the Internet.“ It has all the required ingredients fort his role: messages are fast, short, and transferred broadly. These instinctive aspects of Twitter will call upon our emotional system many times, bypassing our much-needed filters (what Daniel Kahneman famously refers to as our „fast“ and „slow“ thinking). (8) While the tool can be helpful in transmitting valuable information, it may also encourage the less measured aspects of our nature.

You may think of your emotions as part of a private process that happens inside you. Remember, though, that your feelings leak out and are absorbed by others near and far. The consequences can be significant. Not only are you affecting other people’s well-being, you are also affecting their actions, because mood affects behaviour.

\* Note that these studies were funded by Twitter for its own purposes and were not peer-reviewed.

(5) A. D. Kramer, J. E. Guillory, and J. T. Hancock, „Experimental Evidence of Massive-Scale Emotional Contagion Through Social Networks,“ Proceedings of the National Academy of Sciences 111, no. 24 (2014): 8788-90.

(6) E. Ferrara and Z. Yang, „Measuring Emotional Contagion in Social Media,“ PLoS One 10, no. 11 (2015): e0142390.

(7) Steven Levy, „To Demonstrate the Power of Tweets, Twitter’s Ad Researchers Turned to Neuroscience, Here’s What Happened,“ backchannel.com, February 5, 2015, <https://backchannel.com/this-is-your-brain-on-twitter.ca0725cea2b#.c6mw7aqfc>.

(8) D. Kahneman, Thinking, Fast and Slow (New York: Macmillan, 2011).

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Sean Taylor, who received his PhD from NYU and now works for Facebook, has studied how existing ratings and comments influence subsequent ratings. (3) He found that if you manipulate the ratings so that the first review is glowing, the likelihood of other positive reviews increases by 32 percent and the final rating is enhanced be 25 percent! This means that the difference between a restaurant with an average rating and one with a phnomenal rating can sometimes be attributed to the first person who happened to log on and register their opinion. The ability of one person, one rating, to influence so many others that follow is quite remarkable.

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A couple of years ago, at the Weizman Institute of Science in Israel, Micah Edelson, Yadin Dudai, and I decided to investigate what goes on inside the brain when we learn of the opinions and beliefs of others. What exactly changes, physically, in the brain?

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After the movie is over, you sit down in front of a computer and take a test involving two hundred questions about the movie. What colour dress was the woman wearing when she got arrested? (You think it is red.) How many policmen were there at the time? (Probably two.) And so on. Adam, Rosie, and the other participants are also taking the test. Everyone does pretty well. A few days later, you are invited back to the lab. This time your brain will be scanned whole you take the test again in an MRI scanner. For this test, however, before you decide on each answer, you are shown the responses of Adam, Rosie, Sue, and Danielle. Unbeknownst to you, in some instances you are being presented with fake answers – and they’re purposely wrong.

Here we go. What colour dress was the woman wearing when she got arrested? You think it is red, but Adam, Rosie, Danielle, and Sue all say white. What do you do? Astonishingly, 70 percent of the time, people go along with the wrong answer given by others. Although these participants thought they knew the trouth, their confidence was shattered bet he group.

That’s not all. At the end of the test, we reveal to our participants that, in fact, some of the answers given by Sue, Danielle, Adam, and Rosie were fake. We then ask the participants to take the test one more time, and to polease answer the questions according to their own memories.

This is where things become really interesting. The manipulation was so powerful that half of our volunteers’ memories are changed forever – they now have inaccurate recollections of the movie and are stuck with the wrong answer. (4) When asked if they thought they were still being influenced by the fake answers we had shown them before, almost uniformly their response was „No!“

(3) Lev Muchnik, Sinan Aral, and Sean J. Taylor, „Social Influence Bias: A Randomized Experiment,“ *Science* 341, no. 6146 (2013): 647-51

(4) Micah Edelson, Tali Sharot, R. J. Dolan, and Y Dudai, „Following the Crowd: Brain Substrates of Long-Term Memory Conformity,“ Science 333 no. 6038 (2011): 108-11