The Science of Empathy

(November 2019)

Have you ever asked yourself why you yawn when someone next to you yawns? Maybe you always laugh when your friend does, and you do not know why. Or you tear up when an actor sobs in a film. We likely do these things because of the empathy that we establish through our mirror neurons. Empathy is the understanding of another person's thoughts, feelings, and condition from his or her point of view, rather than from one's own.

A mirror neuron is a cell in the body that reacts when you act or do something based on the action or emotion of someone else. Research on mirror neurons was first done with monkeys. We do not know as much about how these work in people, but scientists use what they have learned from monkeys to compare their findings. The results are compelling.

When someone smiles, our mirror neurons have a hand in our instinct to smile back. When someone close to us feels something, we often do as well. This is not just because we have innate empathy, but because we hone that empathy through the mirroring of those feelings. We not only react to what someone experiences but may also experience it. This helps us understand how other people feel and lets us communicate with them in better ways.

Not only do these mirror neurons help us learn about others, but some people think they may also help us with language. We know the best way to learn a language is by immersing oneself in it. Mirror neurons have a role in this case. How other people talk, in tandem with language, is 'mirrored' by the subject, which helps them understand it.

While we are still unsure of the extent of their role, mirror neurons do have an impact on how we establish empathy and connect to other people. More

research on mirror neurons is underway. It may not be long before we have a full understanding of how these cells impact our day-to-day life.

Teacher Resources

Please note: this non-controlled readable text passage features a ***description text structure***. As such, it is written to be ***at least 80% decodable at Substep 4.2***. A specific decodability score is listed below.

- This text passage is 80.18% decodable at Substep 4.2.

Text Easability Scores
If you would like to measure the text easability scores of this passage, please follow the directions below.

1. Visit the Coh-Metrix Text Easability Assessor website at *http://tea.cohmetrix.com/*. If you do not already have a login and password, create one. It is free and easy to sign up for access to the website.

2. Once you have created an account and sign in, you will be taken to a page with an empty, white text box. Copy and paste the text from this passage into the empty, white text box. Make sure you are only copying and pasting the body of the passage. Do not include the title, date, or any of the resources present in the passage.

3. When you have pasted the passage into the text box, click on the red button beneath the text box that says "Analyze." There will be a short delay and after a few seconds, you will see a bar graph appear to the right of the screen.

4. The bar graph will give you the percentages for several text characteristics including: narrativity, syntactic simplicity, word concreteness, referential cohesion, and deep cohesion.

5. Below the bar graph, the Flesch Kincaid Grade Level is also included for your benefit.

6. Lastly, a paragraph is provided that explains the meaning of the measurements of the text characteristics for your particular passage.

7. Once you have completed measuring your passage, you can click on the "Clear" button below the text box and measure another passage, if you wish.

This text passage is archived under *Science & Technology.*