An fMRI Study on How We Judge People Who Are Like Us and Not Like Us

Mitchell JP, Macrae CN, Banaji MR. Dissociable medial prefrontal contributions to judgments of similar and dissimilar others. *Neuron* 2006;50:655-663.

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Do our brains encode some people as more human and others as less human? When physicians make treatment decisions, they must also make judgments about the patients. They must assess the patients' behavior, predict their habits, and determine their preferences. As physicians make these judgments, they must ascribe certain emotions to the patients. The ventromedial prefrontal cortex (vmPFC) is implicated in ascribing feelings, desires, and motivations to people. Conversely, the dorsomedial prefrontal cortex (dmPFC) is used to ascribe beliefs and knowledge (in addition to some emotional states). Some scientists believe that the vmPFC is implicated in encoding people as more human and that the dmPFC is implicated in encoding people as less human. Can using different parts of the neuroanatomy to make judgments about different patients affect treatment decisions?

Scientists at Harvard University found that people use the vmPFC to make judgments about people like them and the dmPFC to make judgments about people who are not like them. The Harvard scientists presented a group of subjects with pictures of two people, each with a description. Both pictures were of White people, so race was not a factor in the study. One person was described as an evangelical Christian, a registered Republican from the Midwest, and conservative. The second person was described as not particularly religious, a registered Democrat from the East Coast, and liberal.

After the subjects viewed the pictures and descriptions, they were asked to decide which person was most like them and which person was least like them. The scientists used functional magnetic resonance imaging (fMRI) to scan the subjects' brains while asking them 66 questions about each person's preferences and potential behavior.

When the subjects answered the questions about the similar person, the *vmPFC* activated. However, when the subjects answered the same questions about the dissimilar person, the *d*mPFC activated. Finally, when the subjects were asked to answer the same 66 questions about themselves (to predict their own behavior, to determine their own preferences, to assess their own habits), the *vmPFC* activated. This was the very same part of their brain that they used to judge the person who was most similar to them.

A series of studies demonstrates that people whom we see as "other" or dissimilar we may also see as less human. The vmPFC may be activated when subjects make inferences about more human aspects of emotion. The dmPFC may be activated when people make judgments about

another person's knowledge or beliefs. We may assume that people who are not like us feel emotions that are less human. We may also assume that people who are most like us feel human emotion with greater depth. We may show less empathy for those whom we encode as less human. We also may fail to understand their needs.

These judgments may affect how physicians interact with patients whom they see as dissimilar. The most telling part of this study is that all of the people featured in the pictures were the same race. It is reasonable to believe that the neurophysiologic reactions would be even more pronounced if the differences included income level, ethnicity, social status, gender, educational level, sexual orientation, body size, or English language proficiency.