Feelings matter less to teenagers

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Teenagers take less account than adults of people's feelings and, often, even fail to think about their own, according to a UCL neuroscientist. The results, presented at the BA Festival of Science today, show that teenagers hardly use the area of the brain that is involved in thinking about other people's emotions and thoughts, when considering a course of action.

Many areas of the brain alter dramatically during adolescence. One area in development well beyond the teenage years is the medial prefrontal cortex, a large region at the front of the brain associated with higher-level thinking, empathy, guilt and understanding other people's motivations. Scientists have now found that, when making decisions about what action to take, the medial prefrontal cortex is under-used by teenagers. Instead, a posterior area of the brain, involved in perceiving and imagining actions, takes over.

Dr Sarah-Jayne Blakemore of the UCL Institute of Cognitive Neuroscience, giving the BA Festival's BAYS lecture, said: "Thinking strategies change with age. As you get older you use more or less the same brain network to make decisions about your actions as you did when you were a teenager, but the crucial difference is that the distribution of that brain activity shifts from the back of the brain (when you are a teenager) to the front (when you are an adult).

"The fact that teenagers underuse the medial pre-frontal cortex when making decisions about what to do, implies that they are less likely to think about how they themselves and how other people will feel as a

result of their intended action.

“We think that a teenager’s judgement of what they would do in a given situation is driven by the simple question: ‘What would I do?’. Adults, on the other hand, ask: ‘What would I do, given how I would feel and given how the people around me would feel as a result of my actions?’ The fact that teenagers use a different area of the brain than adults when considering what to do suggests they may think less about the impact of their actions on other people and how they are likely to make other people feel.”

In the study, teenagers and adults were asked questions about the actions they would take in a given situation while their brains were being scanned using fMRI. For example, ‘You are at the cinema and have trouble seeing the screen. Do you move to another seat?’ A second set of questions asked what they would expect to happen as a result of a natural event eg. ‘A huge tree comes crashing down in a forest. Does it make a loud noise?’

Although teenagers and adults chose similar responses, the medial pre-frontal cortex was significantly more active in adults than in teenagers when questioned about their intended actions. Teenagers, on the other hand, activated the posterior area of the brain known as the superior temporal sulcus – an area that’s involved in predicting future actions based on past actions.

While children start to think about other people’s mental states at around age five, this new data shows that the neural basis of this ability continues to develop and mature well past early childhood.

A second piece of research presented at the festival shows that teenagers are also less adept at taking someone else’s perspective and deciding how they would feel in another person’s shoes.

Participants aged eight to 36 years were asked how they would feel and how they would expect someone else to feel in a series of situations. Adults were far quicker than teenagers at judging emotional reactions – both how they would feel and how a third party might feel in a given situation. For example, 'How would you feel if you were not allowed to go to your best friend's party?' or 'A girl has just had an argument with her best friend. How does she feel?'

Dr Blakemore said: "It seems that adults might be better at putting themselves in other people's mental shoes and thinking about the emotional impact of actions – but further analysis is required. The relative difficulty that teenagers have could be down to them using a different strategy when trying to understand someone else's perspective, perhaps because the relevant part of the brain is still developing. The other factor to consider is that adults have had much more social experience."

"Whatever the reasons, it is clear that teenagers are dealing with, not only massive hormonal shifts, but also substantial neural changes. These changes do not happen gradually and steadily between the ages of 0–18. They come on in great spurts and puberty is one of the most dramatic developmental stages."

Source: University College London

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