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Inside the brains of men and women controlling their emotions

Women do seem to cry more readily than men, but is that because they are less able to control their emotions? According to Ute Habel and colleagues, research does suggest women are more 'emotional'. They cite the fact that women are more vulnerable to emotional disorders, and a study showing men are better able than women to control their negative emotions.

So if this gender difference is true, what is happening in men's brains when they exert control over their emotions, and how does it differ from female brain activity in similar circumstances?

Habel and colleagues scanned the brains of 19 women and 21 men while they performed a simple verbal memory task. On some trials the participants were also exposed to the smell of rotting yeast, thus triggering the negative emotion of disgust.

The smell impaired the participants' performance, but to the researchers' surprise, the women were no more affected by the horrible smell than the men, ostensibly contradicting the notion that women are less able to control negative emotion. However, the researchers pointed out this didn't mean their brain imaging findings wouldn't reveal differences in the way the male and female participants processed emotions and exerted cognitive control during the memory task.

Indeed, key gender differences were found. Women showed greater brain activation to the smell on its own, and to the memory task on its own. And, crucially, when they performed the memory task while exposed to the smell, they didn't show any activation indicative of an interaction – it was as if the smell and memory task were processed in parallel.

In contrast, when the men performed the task while exposed to the smell, there was evidence of interaction between cognitive and emotional areas in the brain, with cognitive activation seemingly outweighing emotion-associated activation.

"These results provide initial evidence for the assumption that the interaction between emotion and cognition relies on differential processing mechanisms in men and women," the researchers said.


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Author weblink: http://tinyurl.com/yydvqw

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The personality of early risers

Morning people. You know the type; you might even be one. They've already done the housework and gone for a jog while the rest of us are still blissfully cocooned in our beds. According to Juan Francisco Diaz-Morales, such people tend to be of a certain personality: they favour the tangible and concrete, they trust their experience and the observable over intuition and feelings; they have an attention to detail and a preference for logic. They are respectful of authority, care about social conventions and are rarely politically radical.

Diaz-Morales gauged the 'morningness' vs. 'eveningness' of 360 undergrads (275 were female) using the Composite Scale of Morningness. It's a 13 item scale that asks participants things like what time they typically get up and go to bed; how alert they feel in the morning; and when they are at the peak of their mental performance. He also measured the students' personality using the Million Index of Personality Styles, a 180 item test with scales on what motivates people, their thinking style and how they relate to others.

Seventeen per cent of the women were classified as morning types, 61.8 per cent as intermediates, and 18.8 per cent as evening types. Among the men, 30.6 per cent were morning types, 50.6 per cent were intermediates and 18.8 per cent were evening folk.

In contrast to morning types, evening people preferred the symbolic over the concrete, were creative and risk-taking, and tended to be non-conformist and independent.

Diaz-Morales said these findings are “a further step towards a more complete and integrated understanding of personality characteristics related to morningness and eveningness dimensions.”


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Author weblink: http://forteza.sis.ucm.es/profes/juanfran/
What do criminal barristers think of psychologists and psychiatrists?

Most criminal barristers think psychiatrists make more useful expert witnesses than clinical psychologists, with the latter considered to be most appropriate when it comes to determining confession reliability. That's according to a survey of 62 barristers by Tim Valentine and colleagues.

In case any readers are unsure of the difference – psychiatrists are medical doctors who have gone on to specialise in mental health. Clinical psychologists are psychology graduates who have gone on to specialise in mental health following their post-graduate training, which these days takes the form of a doctorate with taught and research-based components.

It always used to be psychiatrists who were called on to act as expert witnesses in criminal cases, but over the last twenty years or so, psychologists have been increasingly called on too.

Forty-six per cent of the current sample of barristers said they thought the main difference between psychologists and psychiatrists as expert witnesses, was that psychiatrists are for mental illness whereas psychologists are for issues of personality. Dishearteningly for psychologists, 22 per cent of the barristers said the main difference was that psychiatrists are more useful.

Consistent with this, most barristers said they would call on a psychiatrist, rather than a psychologist, for issues relating to witness reliability and mitigation. However, for issues of fitness to plead, most (85 per cent) said they would also call on a psychologist to back up a psychiatrist's testimony. Only 22 per cent said they would do the same for diminished responsibility. For confession reliability the majority (72 per cent) said they would actually call on a psychologist rather than a psychiatrist.

The authors said it might help the standing of psychologists in court if legal professionals were given information about the underlying scientific basis of psychology and its potential contribution to the criminal justice system. They also called on psychologists and psychiatrists acting as witnesses to be provided with accredited training, a suggestion supported by the majority of the sampled barristers.


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Author weblink (third author):
http://www.goldsmiths.ac.uk/psychology/staff/valentine.php
We're useless at predicting how what happens will affect us emotionally

When making decisions, a key factor we weigh up is how we think the outcome of our decisions will make us feel emotionally – what psychologists call postdecisional affect. The trouble is, we're useless at predicting how we'll feel.

Nick Sevdalis and Nigel Harvey gave 47 participants £10 each to split as they chose with an unseen stranger in another room. If the stranger rejected the amount they were offered as too mean, then both the participant and stranger would go away empty handed. The participants were asked how much regret and disappointment they expected to experience if their offer was rejected.

In fact, the task was fixed - there were no strangers, and every participant was told that their offer had been rejected. Immediately after receiving the rejection, the participants were asked to report how much regret and disappointment they actually felt. Participants who had made reasonably high offers experienced significantly less regret than they thought they would, and on average, all participants experienced less disappointment than they expected.

In a second experiment, 27 students were asked to predict the grade they would receive for a real piece of coursework and to say how much regret and rejoicing they would experience if their actual mark was higher or lower than they expected. After receiving their grade, they reported how the news actually made them feel.

Overall, the students underestimated the mark they received, but they overestimated how delighted this better-than-expected result made them feel. Together with the first experiment, the findings suggest we overestimate how despondent bad outcomes will make us feel, and we overestimate how pleased good outcomes will make us feel.

The researchers suggested that to improve our decision-making, we should discount how we think different outcomes will make us feel. "Anticipated regret is certainly a powerful decision cue," they said. "Whether it is an effective one remains to be empirically demonstrated."


Author weblink:
http://www1.imperial.ac.uk/medicine/people/n.sevdalis/activities/

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Mothers' reading style affects children's later understanding of other people's minds

The use of cognitive verbs like 'think', 'know', 'remember' and 'believe' by mothers when reading picture books to their children has a beneficial effect on their children's later ability to understand other people's mental states – what psychologists call their 'theory of mind'.

This has been demonstrated before with young children aged between three and four years old. But now Juan Adrian and colleagues have found it also holds true with children up to seven years old, even as maternal influence might be expected to diminish.

The researchers observed the way 41 mothers read picture books to their children who were aged between three and six years. The children's understanding of other people's mental states was also tested, for example by showing them that a Smarties tube contained counters, not Smarties, and then asking them to predict what another child would think was inside the tube.

A year later, the mothers were again observed reading to their children, and again the children's understanding of other people's mental states was tested, this time using some more difficult tasks.

The longitudinal nature of the experiment allowed the researchers to check that mothers' language style really had a causal role. They found that mothers' use of more cognitive verbs at baseline predicted their child's understanding of mental states a year later, even after controlling for children's baseline understanding of mental states and mothers' educational background. But the reverse wasn't true – children's understanding of mental states at baseline didn't predict mothers' later use of cognitive verbs.

A more detailed breakdown of the mothers' reading style showed that it was particularly references to story characters' mental states and explaining their thoughts and actions using 'think' terms (e.g. Mother says: “...this boy sees so many people and thinks, 'I'll pretend I don't know what's going on and I'll push to the front of the queue’”) that was predictive of their children having a more advanced understanding of mental states a year later.


Author weblink: http://www.psi.uji.es/persona/index2i.php?p_per_id=55501
People sensitive to disgust are more likely to hold right-wing views

People who are sensitive to interpersonal disgust – for example, they dislike sitting on a bus seat left warm by a stranger – are more likely to hold right-wing attitudes and to be racist.

That's according to Gordon Hodson and Kimberly Costello, who say that in the same way that core disgust guards the bodily boundary, interpersonal disgust may serve to guard cultural boundaries, by averting us from people who are not members of our group, and drawing us to those who are.

Hodson and Costello asked 103 English Canadian students questions about their disgust sensitivity, their political orientations, their fear of disease and their attitudes to immigrants and other marginalised groups like foreigners, homosexuals, drug addicts and the poor.

High sensitivity to interpersonal disgust was associated with right-wing authoritarian beliefs, a less-than-human perception of immigrants and negative attitudes to marginalised groups such as the poor. It was also associated with more positive attitudes towards other English Canadians.

Other types of disgust sensitivity, such as aversion to eating monkey meat (core disgust) to touching dead bodies (death-related disgust) and to people watching pornography involving animals (sex-related disgust) were correlated with interpersonal disgust, but did not themselves predict racist or prejudice attitudes once levels of interpersonal disgust were taken into account.

Interpersonal disgust sensitivity – not wanting to wear clean second hand clothes is another example - continued to predict racist attitudes even after fear of disease was taken into account. Hodson and Costello said such sensitivity may “reflect powerful symbolic cultural forces that socialise withdrawal strategies to protect the self from potentially offensive objects, including social groups.”

Hodson told the Digest his lab are testing desensitisation procedures in the hope of reducing prejudice: “If disgust sensitive people are more prejudiced then efforts to reduce disgust sensitivity through systematic desensitisation and related procedures (i.e. presenting participants with basic disgusting stimuli and intergroup disgust stimuli under controlled settings paired with relaxation) should help to reduce prejudice.”


Author weblink: http://www.brocku.ca/psychology/people/hodson.htm

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