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Psychopaths have poor sense of smell, say Macquarie University scientists

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Scientists have discovered that there may be a link between psychopaths and those with a bad sense of smell . Picture: Thinkstock

Source: Herald Sun

PSYCHOPATHS have a remarkably poor sense of smell, according to a study by Australian scientists published today.

Researchers at Sydney's Macquarie University tested a theory that psychopathy - a severe personality disorder characterised by lack of empathy, antisocial behaviour and callousness - may be linked to impaired smelling ability.

Both phenomena have been independently traced to dysfunction in part of the brain called the orbito-frontal complex (OFC).

Mehmet Mahmut and Richard Stevenson of the Department of Psychology at Macquarie University

trials the olfactory skills of 79 individuals, aged 19 to 21, who had been diagnosed as non-criminal psychopaths and lived in the community.

Using "Sniffin' Sticks" - 16 pens that contain different scents, such as orange, coffee and leather - they found the participants had problems in correctly identifying the smell, and then discriminating it against a different odour.

Those who scored highest on a standard scorecard of psychopathic traits did worst on both counts, even though they knew that they were smelling something.

The finding could be useful for identifying psychopaths, who are famously manipulative in the face of questioning, says the paper, published in the journal *Chemosensory Perception*.

"Olfactory measures represent a potentially interesting marker for psychopathic traits, because performance expectancies are unclear in odour tests and may therefore be less susceptible to attempts to fake 'good' or 'bad' responses."

The OFC is a front part of the brain responsible for controlling impulses, planning and behaving in line with social norms.

It also appears to be important in processing olfactory signals, although the precise function is unclear, according to previous research.

Odour molecules bind to specific nerve cells in the base of the nose, which then send signals via the lateral olfactory tract to the primary olfactory cortex.

From there, the signals go to OFC via a brain organ called the mediodorsal nucleus, located in the thalamus.

The study makes clear that a poor sense of smell does not by itself mean that someone is a psychopath. Olfactory dysfunction can also occur in schizophrenia, Parkinson's and Alzheimer's disease, it notes.

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