

## **The perfumed garden**

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### **Support for the idea of human sex pheromones**

IT IS every perfume-maker's dream to find a spray that plugs straight into the hypothalamus—the part of the brain responsible for libido. Unfortunately, evidence for such brain-manipulating chemicals in humans is inconclusive. But it is not non-existent. General body odour, which is controlled by part of the immune system called the major histocompatibility complex (MHC), is known to be involved in sexual attractiveness in several species, and some research suggests mankind is one of them. In addition, studies using brain scanners have found that smelling a chemical called androstadienone (AND) activates the hypothalamus in women, but not in men, whereas smelling estratetraenol (EST) activates it in men, but not women. AND is a derivative of testosterone that is found in men's sweat. EST is a cousin of oestrogen found in women's urine.

Two results that have emerged this week strengthen the idea that all these odours are indeed sexual—but with a novel twist because it comes from work that includes homosexuals as well as heterosexuals. A forthcoming paper in *Psychological Science*, by Charles Wysocki of the University of Pennsylvania and his colleagues, shows that gay men prefer the smell of sweat collected from the armpits of gay men and heterosexual women to that collected from heterosexual men. Similar odours from gay men, however, were the least preferred by heterosexual men and women. Meanwhile, Ivanka Savic of the Karolinska Institute in Stockholm and her colleagues reported in this week's *Proceedings of the National Academy of Sciences* that the hypothalamuses of gay men in brain scanners respond to AND and EST in a similar way to those of straight women.

The second result is, perhaps, the less surprising. If the brains of gay men are attracted to other men through sight and sound, then why not through smell, too? But the idea that men can, in effect, smell gay is harder to explain. It may be because the MHC is affected in the womb by exposure to testosterone. If homosexuality is caused by unusual in-utero testosterone exposure (a plausible hypothesis), then the system that controls body odour may change in related and detectable ways.

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