THE SMELL OF LOVE

AN EXPLORATION INTO THE RELATIONSHIP BETWEEN SMELL, ATTRACTION, IMMUNITY & EVOLUTION.

In 1974, the writer and medical researcher Lewis Thomas suggested that different Major Histocompatability Complex (MHC) proteins that encode various components of the immune system could be tightly linked to others that dictate our natural odour.

He was considering training dogs to sniff out compatible people for skin grafts and organ donations. This led to work on laboratory mice and rats that established that animals preferred mates that were different in their MHC genes. Scientists speculated that this was either a mechanism to prevent interbreeding or a way for animals to insure that their offspring would have immune systems diverse enough to fight as many diseases as possible.

Claus Wedekind, of the Zoological Institute at Bern University in Switzerland, also believed that body odour might signal that its owner had desirable immune genes. He devised an experiment to see if human body odour correlated with MHC genes and if people could tell. Each woman was given various sweaty T-shirts to smell and asked if the odour was pleasant or not. "Women who are not taking oral contraceptives and who are dissimilar to a particular male's MHC, perceive his odour as more pleasant than women who's MHC is more similar to that of the test man." However, if a woman was taking oral contraceptives, which partly mimic pregnancy, this predilection was reversed, and they gave higher rating to men with similar MHC. "The Pills effect really surprised me," Dr. Wedekind said in an interview.

The proceedings were published by the Royal Society of London in 1995. In a follow up study, Dr. Wedeking was surprised to find no particular combination of MHC genes seemed more desirable than any other, he found that his subjects seemed simply to find difference appealing.

There are more than 100 MHC genes on human Chromosome Six and so many versions of each gene, that in a typical population of 100,000 people, only two or three people are likely to match very closely."If you think about how hard it is finding an organ donor, that's what we are talking about," said Carole Ober of the University of Chicago's department of Human Genetics, who is running the Chicago studies. "It's virtually impossible to find a match if you go outside your own family". So on a different research track, Dr. Ober and Mc Clintock and their Chicago colleagues studied 411 married couples in 31 Hutterite colonies in South Dakota. A tight-knit religious group who inter-marry, the Hutterites are usually closely related to one another because they are all descended from only 64 people who emigrated from Europe in the 1870's. This means that couples do not have society's astronomical odds against sharing MHC genes.

Surprisingly, the women preferred the odours of men who shared the same type of a few MHC genes, or alleles, with themselves. The most appealing odour donors shared 1.4 alleles on average, whereas the least appealing shared 0.6 alleles. What's more, these alleles were the ones the women had inherited from their fathers and not their mothers. This is no Freudian Oedipal complex, that they were more attracted to the smell of T-shirt's of men

who have similar genes to their dads! They do, however, somehow avoid marriage with partners whom tey shared too many MHC genes.

McClintock thinks that the previous interpretation this is too narrow, that limited inbreeding can work, as it may actually make sense to stick with a combination of genes that are known to successfully fight disease. Also, the rarer they're MHC, the less likely it is that evolving pathogens will be able to outsmart them.

Animals that congregate in groups, like us, invariably share parasites and other infections, but it is this same pathway that they also spread health-promoting microbes. Evolutionary biologists have long included microbes and parasites in how they think about sexual reproduction. It may well be, that it is the smell of a particular colony of micro organisms that you are attracted to!

Research on the microbes that inhabit our bodies has progressed rapidly in recent years. Scientists think that these communities, most of which live in our gut, shape our health in a myriad of ways, affecting our vulnerability to allergic diseases like Hay Fever, how much weight we put on, our susceptibility to infection and maybe even our moods.They can also, it seems make us sexy. Susan Erdman, a microbiologist at M.I.T. calls it the "glow of health." The microbes you harbour, she argues, can make your skin smooth and your hair shiny: they may even put a spring in your step. She stumbled on the possibility some years ago when, after feeding mice a probiotic microbe, a technician in her lab noticed the

animals grew lustrous fur, males had elevated testosterone and oversized testicles. Microbes had transformed these animals into rodent heart-throbs.

When given to females, the probiotic also prompted deeper changes. Levels of a protein called interlukin 10, which helps to prevent inflammatory disease and insure successful pregnancy, went up, as did an important hormone called oxytocin the "love hormone."

SO HERE'S THE MYSTERY, HUMAN SWEAT DOESN'T ACTUALLY SMELL!
The odour results from microbes feeding on sweat, armpits are really fermentation crocks emitting what scientists call volatile organic compounds and lay people call B.O.
So those women may not have smelt the men directly, but rather the aroma of whatever microbial mixes they carried.

What Dr. Erdman's research suggests is that the microbes we carry, the same ones that make us attractive to a potential mate, also directly influence our reproductive success. Another way to look at it: By making their hosts sexy, and by increasing hormones that bring mammals together, microbes help to ensure their own continued existence – the creation of another host.Whether we are really smelling and choosing the human genes directly or the microbes, or both is anyone's guess.

Although kissing is thought to have developed from sniffing!

Evolutionarily speaking smell and taste are the oldest senses; even a single cell animal has ways to detect the chemical composition of its environment. More of our DNA is devoted to genes for different olfactory receptors than any other kind of protein 5%, a fact that must surely emphasize the importance of our sense of smell to our evolution.

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