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### Evolutionary psychology

## A touch of generosity

Aug 14th 2008

From The Economist print edition

### Touch can inspire munificence towards those you trust

PEOPLE touch each other a lot, even strangers. We shake hands, slap backs, kiss and caress. Such behaviour can increase co-operation, which is good from an evolutionary point of view. It has even been shown that waitresses who touch patrons tend to be tipped more generously.

It is known that stroking rats can raise the level of oxytocin, a hormone active in the brain and implicated in various social interactions, such as maternal attachment. In humans higher oxytocin levels have been linked to physiological phenomena like contractions during childbirth, or orgasm. But the link to physical contact is so far unclear. Interestingly, the level of hormone appears to rise in people who are trusted. And more of it seems to inspire greater generosity towards strangers.

This prompted Vera Morhenn of the University of California, San Diego, and her colleagues, to examine the physiological mechanism underlying this and to see whether munificence towards strangers could be manipulated through touch. In their experiment, published in *Evolution and Human Behavior*, they split 96 male and female graduate students into three groups. The first and second received a professional massage but the third did not. Then the first and third group took part in a "trust game".

Participants were paired at random and seated in front of a computer, physically removed from their anonymous partner. Each also got \$10 in cash, supposedly for showing up. The rules stipulated that for each pair, one person, the giver, could cede a part of their money to the other, the trustee. This amount would then be tripled and credited to the trustee, who was subsequently prompted by the computer to sacrifice a part of his stash by returning some to the giver.

Standard game theory predicts that in an anonymous one-off exchange like this the trustee ought to keep the gift and not reciprocate. The giver, too, ought to refrain from donating, since his sacrifice is bound to remain unrequited. Yet that is not what tends to happen with real people. Givers often give and trustees frequently return the favour. (Studies of identical and non-identical twins suggest that co-operative behaviour in trust games is heritable.) In effect, the giver's donation reflects his confidence in the trustee's willingness to reciprocate. In other words, it signals trust.

To test the physiology, Dr Morhenn took blood samples at the start and end of each game and looked for changes in oxytocin levels. She found no effect in the massaged group who did not participate in the game, implying that trust does indeed act as some sort of trigger. But in the players the hormone rose in those who were massaged and fell slightly in those who were not.

Despite receiving statistically identical trust signals from givers, the massaged trustees with their higher oxytocin levels returned a whopping 243% more than their unrubbed counterparts. A clue to why evolution might favour such a double-trigger mechanism may come from the other finding that women appear more susceptible than men to tactile manipulation. Perhaps that is to ensure maternal care of their own brood. If so, such effects seem to extend beyond the mother's bosom.

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