

NEUROSCIENCE NEWS

Studies of interest to practicing psychiatrists

Understanding the 'joy' of aggression

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One of the most perplexing and shocking aspects of human behavior is the cruelty we can inflict on one another. Infamous events such as the Spanish Inquisition, slavery, lynching, conquest of the native Americans, and Nazi concentration camps are so sickening that many of us can barely tolerate hearing about them. How can people behave this way?

Recently, we've been shocked by photographs from the Abu Ghraib military prison in Iraq. American soldiers with unremarkable backgrounds—not Saddam's henchmen—were shown humiliating and abusing Iraqi prisoners. Most remarkable was the joy on the Americans' faces (*Figure 1*).

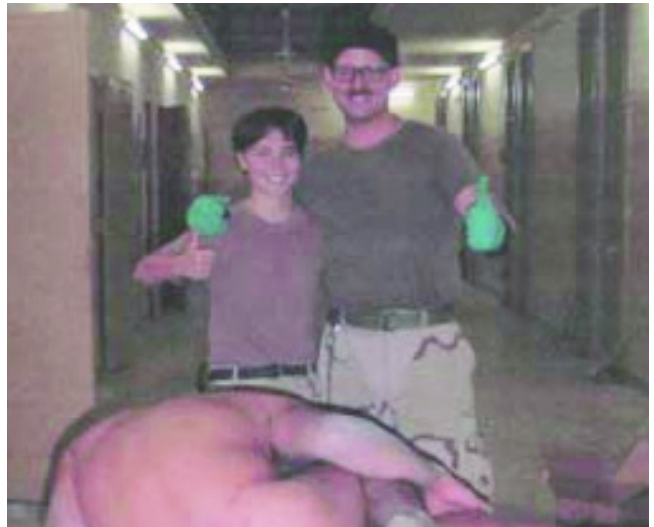
'GOOD' PEOPLE, 'BAD' CIRCUMSTANCES

In experiments with college students, psychologists have shown that "regular" people can become sadistic under the right (or wrong) circumstances.¹ One explanation is that it's not just psychopaths who perpetrate crimes against humanity. Somehow, the psychopath within us all becomes unleashed.

Artificial situations such as the Stanford Prison Experiment (www.prisonexp.org) show that normal people can dissolve into cruelty but

Figure 1

Deriving pleasure from abuse?



American soldiers appearing to enjoy themselves as they humiliate Iraqi prisoners in the Abu Ghraib military prison.

Source: Reprinted with permission of *The New Yorker*, which first published this photo.

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don't explain why. A recent neuroscience experiment suggests a mechanism for this kind of aggression.

DOPAMINE AND AGGRESSION

The nucleus accumbens has been called the brain's "pleasure center," and dopamine is the neurotransmitter that activates it.² Activities and substances that stimulate dopamine release include sex, gambling, and smoking as well as cocaine and alcohol. The good feeling a person gets from these activities/substances reinforces the behavior that produced the feeling. In some cases, problems develop when people cannot resist the urge for more.

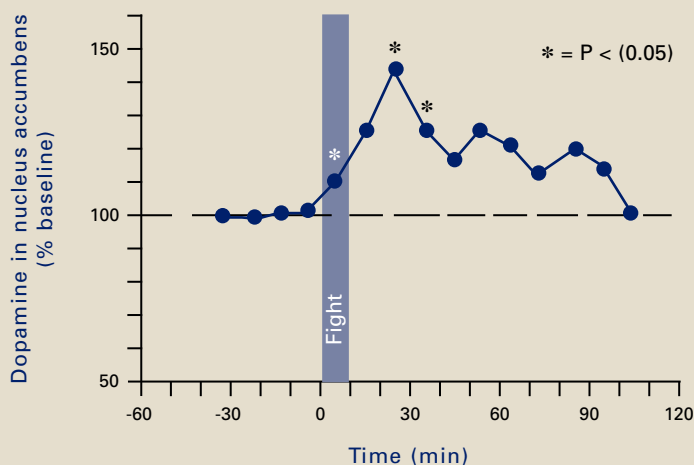
Ferrari et al³ placed micropipettes in rats' nucleus accumbens to measure extracellular dopamine before, during, and after an aggressive confrontation. When the rats were confronted with an intruder rat for 10 minutes, they attacked and bit the intruder an average of 5 times, despite being implanted, tethered, and sampled. During and after the fight, dopamine was increased in the rats' nucleus accumbens (*Figure 2*). Clearly, fighting gave them a "s squirt" of pleasure that lasted almost 2 hours.

If we can extrapolate from this study to humans, we may understand why people become aggressive. At some level, they enjoy it. The bully on the playground, the wife beater, the mean boss—they get pleasure from being aggressive. It's not just serial killers.

It is important to acknowledge that other variables such as poor supervision and too much power affected the actions of American soldiers working as prison guards in Iraq. However, the

Figure 2

A 'squirt' of dopamine during violence



A 10-minute fight increased extracellular dopamine levels in rats' nucleus accumbens for approximately 2 hours, suggesting that aggressive behavior produced pleasure.

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neuroscientific studies show us that aggression can be pleasurable, and people often have a hard time resisting what feels good. This knowledge may help us treat war veterans struggling not only with traumatic memories of violence but also with socially and personally unacceptable feelings of pleasure.

References

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3. Ferrari PF, van Erp AM, Tornatzky W, Miczek KA. Accumbal dopamine and serotonin in anticipation of the next aggressive episode in rats. *Eur J Neurosci* 2003;17:371-8.