Exploring the connection between empathy, neurohormones and aggression

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Empathy is typically seen as eliciting warmth and compassion—a generally positive state that makes people do good things to others. However, empathy may also motivate aggression on behalf of the vulnerable other. Researchers at the State University of New York at Buffalo, examined whether assessed or elicited empathy would lead to situation-specific aggression on behalf of another person, and to explore the potential role of two neurohormones in explaining a connection between empathy and aggression. The study is published in *Personality and Social Psychology Bulletin*.

Design of the Study

Empathic impulses are aimed at reducing the suffering of the target of empathy. Sometimes aggression may be the response that is perceived to best address the need of the other, or best suited to end their suffering. This effect may, in part, be due in part to physiological changes that occur in the body as a result of empathy. The research focused on two neurohormones, oxytocin and vasopressin. Oxytocin has been associated with empathy in previous research, and also with protective aggression. Vasopressin has been much more commonly studied in the animal literature, but has similarly been associated with aggression to defend a mate or offspring.

The first study asked participants to write and answer questions about a time in the past 12 months where they witnessed a close other being hurt

physically or emotionally by a third party other than themselves. The results illustrate that empathy, not trait aggression or perceptions of emotional threat toward the self, motivated predicted aggression of the participants.

The second study involved an empathy manipulation and a distress manipulation. Participants were given a scenario describing someone having financial difficulty, and that person was either worried (high need) or not (low need). Half the participants were told to read the scenario with instructions that were empathy-inducing, and half were not. Participants were also told this person would engage in a competitive task with another individual, and participants were given the opportunity to sabotage the performance of the other individual by assigning that person a certain amount of hot sauce to drink. "Hot sauce was described to them as a clearly painful and performance hindering substance, meaning that the more hot sauce they assigned, the worse the anonymous person would do on the task…and presumably, the more likely that the person with financial troubles could win," explains lead researcher Anneke Buffone.

Results of the Study

Participants who felt empathy in the Study 1 were more likely to aggress against the close other's perpetrator if the close other was perceived to be distressed, but not when the close other was not perceived to be distressed. The empathy manipulation in the Study 2 increased aggression (the amount of hot sauce assigned) toward the target's competitor, but only when the empathy target was described as distressed. The results of study 2 demonstrate that empathy-linked aggression can occur for a stranger, and that provocation by the target is unlikely to be the sole mechanism for empathy-linked aggression.

The participants contributed saliva samples for analysis of their

neurohormone gene variants. In both studies, participants with a short/short version of the 1a vasopressin receptor (AVPR1a) showed less aggression, while those with a long version of the receptor showed higher aggression. The pattern is consistent with the possibility that vasopressin facilitates empathic responses, including aggression, to individuals in need. In one study, individuals with one oxytocin receptor genotype, OXTR rs53576 GG showed greater aggression than those with the AA/AG genotype.

The study ruled out certain variables, such as trait aggression and impulsiveness. "Aggression is known to result from characteristics such as impulsiveness, trait aggression, trait or state anger. We wanted to rule out these motivators of aggression because our argument is that anyone can act aggressively out of an empathic impulse, not just those with a certain personality," Buffone elaborates. "We think that among situational motivators of aggression, witnessing the suffering or need of others people have come to care about has been largely overlooked."

The findings of the research provide evidence that activating empathy may prompt aggression toward those in conflict or competition with empathy targets, even independent of traditional predictors of aggression and in the absence of wrongdoing or provocation from the target of aggression. Empathy could even lead an individual to blame an innocent person for a crime or misdeed to protect a friend or child from punishment. And it is even possible that feeling empathy for strangers perceived to be treated unjustly might motivate aggression on their behalf. In all of these cases, empathy can lead more directly to aggression—anger isn't always necessary.

More information: *Personality and Social Psychology Bulletin*, 40(11).

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