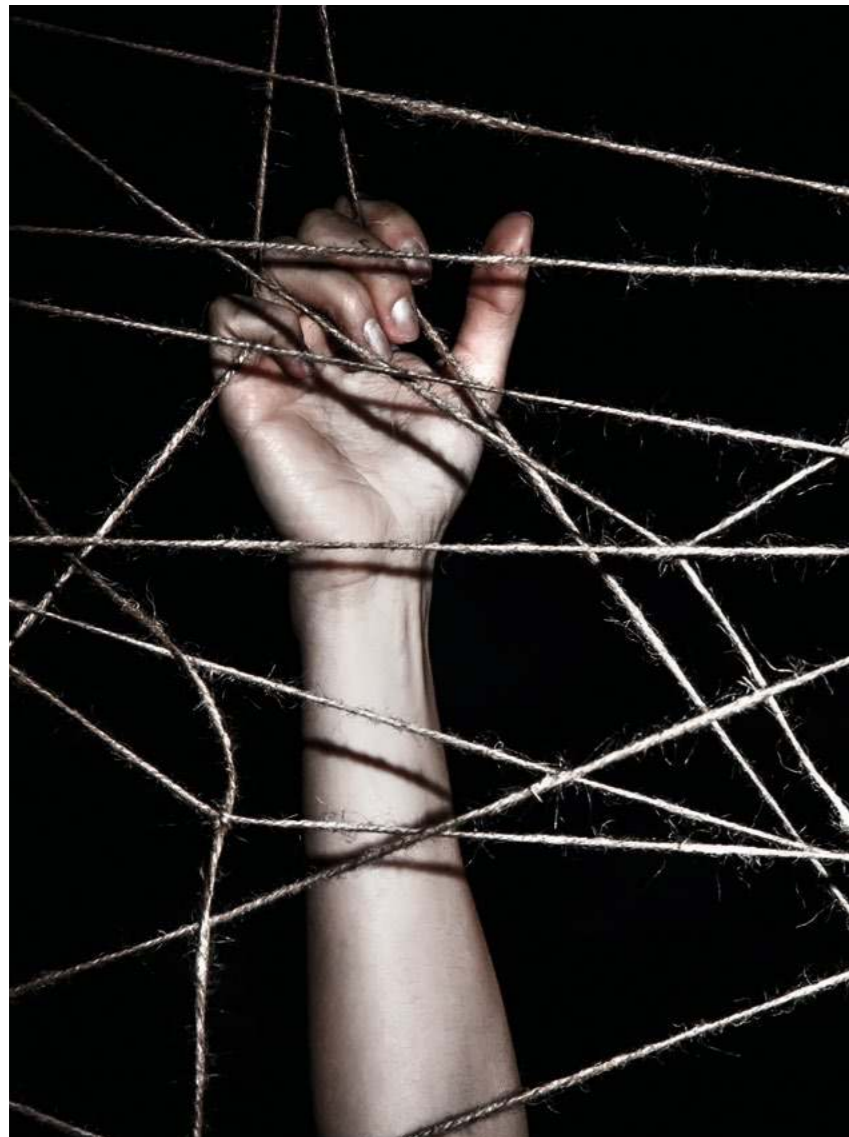


# A fascination with violence:

appetitive aggression in males and females

Exposure to violence during childhood or at later stages of life can result in severe trauma, mental health issues, and in some instances, appetitive aggression, an acquired fascination by or pleasure in violence. Under the leadership of Prof Dr Thomas Elbert, Dr Danie Meyer-Parlapanis and her co-author Dr Mareike Augsburg, from the University of Konstanz in Germany and the University of Zurich in Switzerland respectively, have been studying the effects of violence-related trauma on the appetitive aggression of male and female individuals, carrying out research on a sample of war combatants.



Human beings have been found to be traumatised or adversely affected by victimisation and by the witnessing of violent acts. However, some seem to find the perpetration of aggression appealing, developing a form of 'bloodlust'. It is possible that this pleasure in violence, named appetitive aggression, is part of our species' natural spectrum of behaviours, but it also appears to be affected or accentuated by particular life experiences. While studies have found exposure to childhood violence to be the main driver for ongoing aggression, recent research on war combatants has revealed that high exposure to violence in adulthood can be associated with greater levels of appetitive aggression. Importantly, these studies have focused on the role of sex in the development of appetitive aggression, shining a light on its previously overlooked prevalence in females.

## THE STUDY OF APPETITIVE AGGRESSION

During childhood or at later stages of life, human beings might unavoidably be exposed to violence, whether in the role of witnesses, victims, or perpetrators. The results and consequences of this exposure can be varied, including mental health and behavioural issues, such as post-traumatic stress disorder (PTSD), depression, anxiety, and addiction, as

well as the development of appetitive aggression.

Appetitive aggression is a form of biologically-driven aggressive behaviour that does not serve the purpose of resisting a threat, but implies finding a certain pleasure in the observation or perpetration of violence. At a biological level, appetitive aggression is accompanied by a surge in adrenaline, as well as the release of cortisol and endorphins, hormones that have a variety of physiological functions, some of which include pain alleviation and euphoria. A typical example is the aggressive disposition associated with hunting, resulting in bloodlust and taking pleasure in 'the kill'. Enhanced appetitive aggression has been found to reinforce the cycle of violence, leading to a positive feedback loop in which an individual repeatedly seeks out acts of violence to feel a degree of pleasure or satisfaction.

Exposure to contexts in which human beings repeatedly perpetrate acts of violence against one another, such as domestic violence, organised crime, or armed conflicts, can increase the likelihood of appetitive aggression. Drs Meyer-Parlapanis and Augsburg have carried out extensive research into the effects of exposure to different forms of violence throughout the lifespan, with a particular focus on sex similarities and differences in the development of appetitive aggression.

## LUST FOR VIOLENCE IN WAR COMBATANTS

In many war combatants returning from the battlefield, appetitive aggression has been found to provide resilience against the development of PTSD after being repeatedly exposed to high levels of violence. Dr Meyer-Parlapanis and Dr Augsburg have carried out research on a sample of war combatants in Burundi, examining the relationship between their exposure to or perpetration of violent acts and their appetitive aggression.



Images taken by Dr Danie Meyer-Parlapanis during field work in Burundi

They found that exposure to war and armed conflicts resulted in an increased likelihood for the experience of appetitive aggression, with all combatants displaying substantially

combatants, investigating potential sex similarities and differences in the observed post-war lust for violence.

## The researchers found no difference in the level of appetitive aggression displayed by combatants of different sex

greater aggressive tendencies than males and females in civilian control groups. "Furthermore, the more violence perpetrated, often the higher the levels of appetitive aggression," explains Dr Meyer-Parlapanis. Overall, participating combatants suffered more severely from PTSD symptoms than civilians and had a significantly more positive attitude towards aggression.

## A GROUND-BREAKING SEX COMPARISON

Aggression is often considered to be a predominantly masculine trait. Perhaps as a result of this, most studies of appetitive aggression have been carried out on male samples. Dr Meyer-Parlapanis and Dr Augsburg, however, incorporated both male and female

In contrast to observations collected on non-combatant samples, the researchers found no difference in the level of appetitive aggression displayed by combatants of different sexes. This

suggests that all individuals, regardless of their sex, can display both mental health complications and an increase in appetitive aggression after being repeatedly exposed to acts of violence.

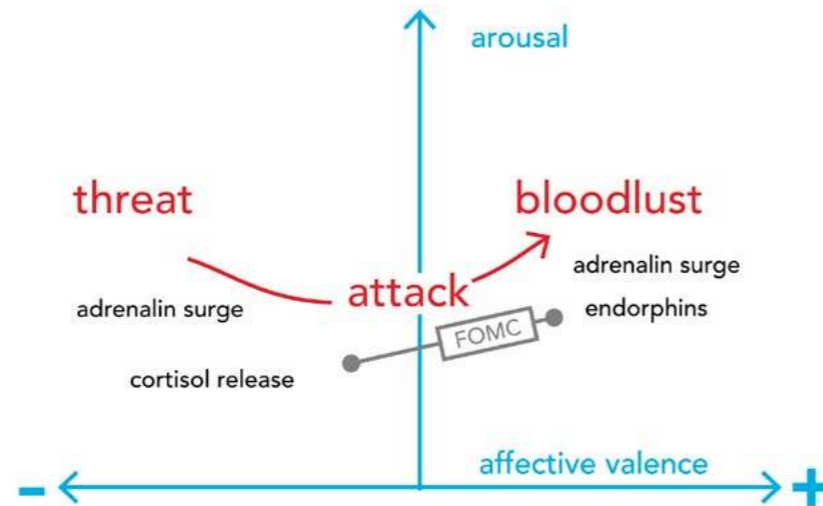
Their studies did, however, reveal sex differences in combatants who were also victims of childhood maltreatment and traumatic events. In males, both of these factors were positively associated with appetitive aggression; in females, traumatic events had no association with appetitive aggression and childhood maltreatment was negatively associated, suggesting that appetitive aggression was less likely to develop in those individuals. Furthermore, perpetrated events were more strongly correlated with levels of appetitive

aggression for females than males, and, unlike males, females' acquired dispositions towards aggression did not appear to attenuate their mental health issues after repeated exposure to violence.

One of the research papers by Drs Meyer-Parlapanis and Augsburgger suggests that "in both sexes, appetitive aggression may have evolved as a biologically prepared response to cruel environments but might develop along different trajectories". Dr Meyer-Parlapanis has further explored the theme of sex similarities and differences in appetitive aggression in her doctoral thesis as a means to deconstruct what is commonly understood as the 'cycle of violence'.

### BREAKING THE CYCLE OF VIOLENCE

The research carried out by Drs Meyer-Parlapanis and Augsburgger highlights the need for further initiatives to expand appetitive aggression to actively include females. Appetitive aggression is a key factor in fuelling cycles of violence, often resulting in recurring maltreatment and conflict, frequently with ripple effects across generations. Ultimately, the work of Drs Meyer-Parlapanis and Augsburgger suggests that while some sex differences have been observed in the way individuals react to repeated exposure to violence, ultimately both



The left side depicts reactive aggression as is typical when one is in a threatening situation. Emotional arousal increases, associated with negative emotions such as fear or disgust, as the body prepares for fight or flight. The right side depicts appetitive aggression as is typical when one is hunting or attacking. Emotional arousal similarly increases, associated, however, with positive emotions such as excitement or desire. POMC is the precursor protein involved in the activated stress axis modulating pain, whether it be triggering cortisol release in the hunted or endorphins in the hunter. (Figure adapted from one originally published in: Elbert, Moran & Schauer, 2017. Lust for violence: Appetitive aggression as a fundamental part of human nature. e-Neuroforum, 23(2), pp. 77-84.)

## An enhanced appetitive aggression has been found to reinforce the cycle of violence

sexes may be comparably vulnerable to experiencing appetitive aggression. As Dr Meyer-Parlapanis says, "Neither sex is immune to appetitive aggression and should not be underestimated as

such in the consideration of mental health interventions and reintegration programs."

# Behind the Bench



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### Research Objectives

Drs Meyer-Parlapanis and Augsburgger's work looks at the psychobiology of proactive human aggression. In particular, they focus on the sex similarities and differences in the development of appetitive aggression.

### Funding

ERC, DFG

### Collaborators

• University of Konstanz: Prof Dr Thomas Elbert; Dr Maggie Schauer, Dr Anselm Crombach, Dr Corina Nandi

- Université Lumière de Bujumbura: Prof Manassé
- Medical School Hamburg: Prof Dr Roland Weierstall
- vivo international: [www.vivo.org/en/](http://www.vivo.org/en/)

### Bio

Danie comes from Atlanta, Georgia, USA and studied under Prof Dr Thomas Elbert at the University of Konstanz, Konstanz, Germany. She submitted her doctoral dissertation entitled "Deconstructing the Cycles of Violence: A focus on female experiences of appetitive aggression". She currently works in Cologne,

Germany on trauma and aggression related to displacement and integration.

Mareike is currently affiliated with the University of Zurich working on associations between experiences of sexual violence, risk behaviour (a "co-actor" of aggression) and gender role perceptions.

### Contact

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## Q&A

### Is appetitive aggression part of human nature for both sexes and, if yes, what evidence is there to support this?

**Danie:** Elbert, Moran and Schauer (2017) delineated that "...appetitive aggression...is... an intrinsic part of the human behavioural repertoire" (p77). However, scientific discourse continues to generalise appetitive aggression as a human experience while simultaneously limiting it as a primarily male experience.

Our studies have provided evidence that we cannot have it both ways: females are capable of experiencing appetitive aggression and further studies investigating appetitive aggression in all members of a population are crucial if we want to continue making the claim that, sex aside, appetitive aggression is a part of our human condition.

### What main differences have you found in the appetitive aggression of male and female war combatants?

**Danie:** Appetitive aggression in male combatants was associated with abuse or trauma experienced as children. For female combatants, on the other hand, life-threatening events experienced in childhood were not associated with appetitive aggression and there was even a negative

association for those who experienced child abuse.

We also saw that the more violence female combatants had perpetrated, the greater the association with appetitive aggression compared to their male comrades, whose appetitive aggression was more associated with general combat experience.

**Mareike:** Most likely, males and females develop appetitive aggression along different trajectories. Cumulated exposure to childhood violence contributes to the evolvement of aggressive behaviour in both sexes. However, regarding specifically the joy of acting violently (i.e. appetitive aggression), the impact of child maltreatment differs. Whilst it boosts the development of appetitive aggression in males, it has the opposite effect on females: the more childhood violence, the less appetitive aggression. In females, active participation in war-related violence (also if forced to do so) seems to be a lot more relevant for becoming appetitively aggressive.

### How do these differences compare to those observed in the appetitive aggression of males and females among the general population?

**Mareike:** This is a very interesting question. Up to now, most research has been done in populations affected by long-term war and crisis. As a consequence, empirical evidence for the concept of appetitive aggression in non-war affected general populations

is rather limited. When it comes to female appetitive aggression outside a warzone, research is almost non-existent so far.

**Danie:** Our first appetitive aggression venture into civilian populations investigated the sporting form, Appetitive Competition Motivation (ACM), in high-level, female football players. These civilian women reported experiencing forms of appetitive aggression, in this case manifested in unsanctioned fouls in a high contact sport. The higher the league level, the more accessible was ACM.

In this study, we also considered the impacts of upbringing style and other socialisation factors. Less traditional households and increased access to toys and role models that were not considered traditionally feminine seemed to play a role later in these female athletes savouring some aspects of the aggression displayed on the pitch.

### What are your next steps in terms of research and investigation?

**Mareike:** We are currently investigating the female cycle of violence by means of a meta-analytical approach. This will give us a great overview about the current state of research regarding female aggression, its predictors and consequences. Based on findings derived from the meta-analysis, we will develop further studies.