

# THE ETHOLOGICAL DEFINITION OF VIOLENCE



Aggression is a natural disposition to behave aggressively, i.e., in a hostile and unfriendly manner.

Functional (or adaptive) aggression in intraspecific relationships is characterized by **constrained** actions, reactions, and social signals between participants in the conflict.

Violence is an **escalated, pathological, and abnormal form of aggression** characterized by the absence of inhibitory control and aimed at **inflicting actual harm**.

Self-defense (or defensive aggression) is a form of aggression performed in response to being threatened and attacked by another individual. It can have violent characteristics, but it does not lack inhibitory control.

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# ARE INTRASPECIFIC KILLINGS COMMON IN ANIMALS



Only **40% of mammalian species** have intraspecific killings (and in the case of many of these species, they are still rare).

They are the cause of death in mammals in only **0.3% of cases**.

Most intraspecific aggression is non-lethal, and across many species, **nonkilling is the default** and killing is the exception, the oddity, the unusual.

Restraints against harming and killing conspecifics are common in animals that **have strong innate weapons and lack the opportunity to avoid members of their own species**.

Chimpanzee cruelty is often exaggerated; apart from two exceptional situations, killings between them have rarely been observed. And the pygmy chimpanzee (bonobo) is widely known for its non-violent nature and **complete absence of intraspecific killings**.

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# THE MYTH OF THE VIOLENT SAVAGE



The popular claim that 15% of the prehistoric population died as a result of wars is based on incomplete, selective data.

Considering all the archaeological evidence, **only 2% of people** have been killed in all of human history.

Although homicide rates vary tremendously from one society to the next and also change over time within the same society, **the vast majority of people never kill or attempt to kill anyone.**

Anthropologists have collected examples of hundreds of cultures in which wars were absent or mainly defensive. Overall, the majority (64%) of cultures are nonwarring or unwarlike.

There is no evidence that war is an expression of innate human tendencies or human psychological evolution.

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# WAR AND RESISTANCE TO KILLING



Military experts have found that **most humans** possess an intense resistance to killing, which is difficult to overcome.

There is **only 2% of the male population** that, if pushed or if given a legitimate reason, will kill without regret or remorse.

After long battles, 98% of soldiers suffer psychological trauma, and only **less than 2% of them with psychopathic tendencies** are not affected by such a problem.

There are many historical accounts of soldiers not shooting at the enemy or deliberately shooting above their heads.

Psychopaths are common among elite or special forces because of their cold-bloodedness (and they can be easily used by authoritarian regimes against dissenting civilians).

Most people never participate in the perpetration of genocidal violence.

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# WHAT PSYCHOPATHY IS AND WHO PSYCHOPATHS ARE



Psychopathy is a **socially devastating personality disorder** defined by a constellation of affective (emotional), interpersonal, and behavioral characteristics, including egocentricity, manipulativeness, deceitfulness, lack of empathy, guilt or remorse, and a propensity to violate social and legal expectations and norms.

Psychopaths are **intraspecies predators** who use charm, manipulation, intimidation, and **violence** to control others and to satisfy their selfish needs. Lacking in conscience and in feelings for others, they selfishly take what they want and do as they please, violating social norms and expectations without the slightest sense of guilt or regret.

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# WHAT KIND OF PEOPLE HARM OTHERS



The average psychopathy (PCL-R) score in community samples is 4–5 out of 40, but for homicide offenders, it is **around 21–23 points**.

According to criminological studies, **psychopathy is the purest and the best explanation of antisocial behavior**.

Even the indirect infliction of harm on people through various social manipulations is linked to psychopathic tendencies.

Only **1–2% of people** have high levels of psychopathy.

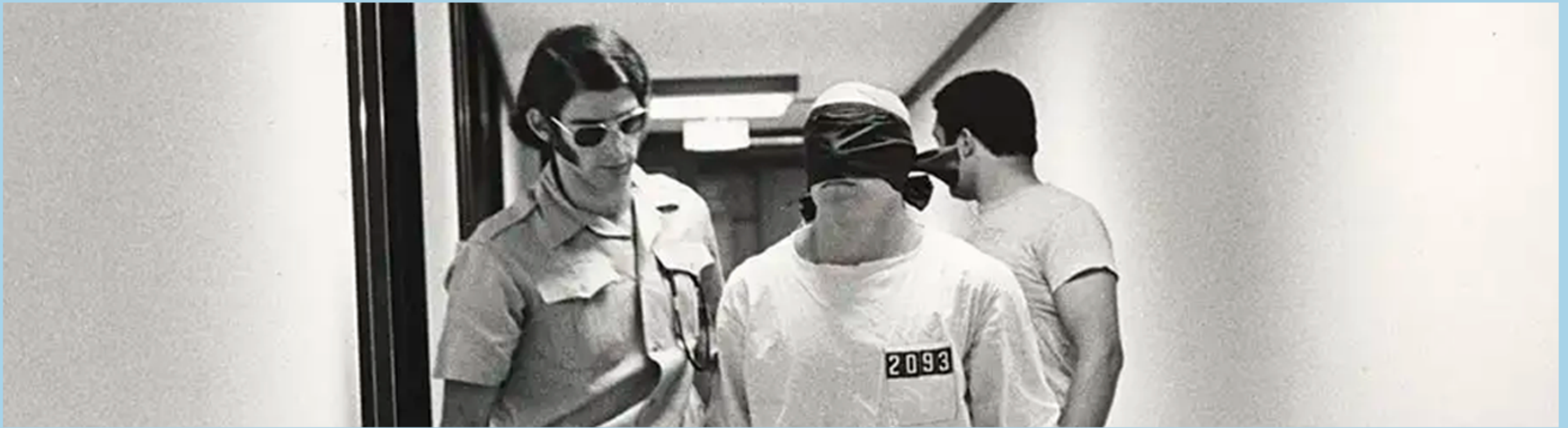
**Up to 21% of managers and CEOs** may be psychopaths, which leads to mistreatment of employees, environmental and social irresponsibility, and "white-collar" crime for personal benefit, even if it harms the company.

Psychopathy explains the **emergence of authoritarian and oppressive regimes**, and **state violators of human rights** have an extreme disposition for self-serving, callous, and ruthless behavior.

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# FAMOUS EXPERIMENTS ON VIOLENCE



*Myth:* In the Milgram experiment, 65% of participants were willing to inflict unrestricted pain (via electric shocks) on another person just at the command of authority (researchers).

*Truth:* Archival data have revealed that **56% of participants stopped the experiment** if they thought another person was truly in pain, and 72% of those who continued did not believe the pain was real (and they were right, as the "victim" was just an actor).

*Myth:* The Stanford Prison Experiment demonstrated that everyone can become cruel if they are placed in a certain position in the social hierarchy, as the "guards" in the experiment brutally abused the "prisoners."

*Truth:* Despite the widespread acceptance of this result, archival data and participant interviews have revealed that **the experiment was merely a staging with a preset outcome.**

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# EVOLUTION OF AGGRESSION INHIBITIONS



Some factors, such as the **presence of strong innate weapons** in conspecifics and their **lack of opportunity to avoid each other** (due to a limited area of habitat or social behavior), can make killings among them a survival-threatening behavior and direct natural selection towards the development of strong restraints against such behavior.

Another significant factor is **inclusive fitness**, which means that killings among carriers of the same genes interfere with the preservation and spread of those genes.

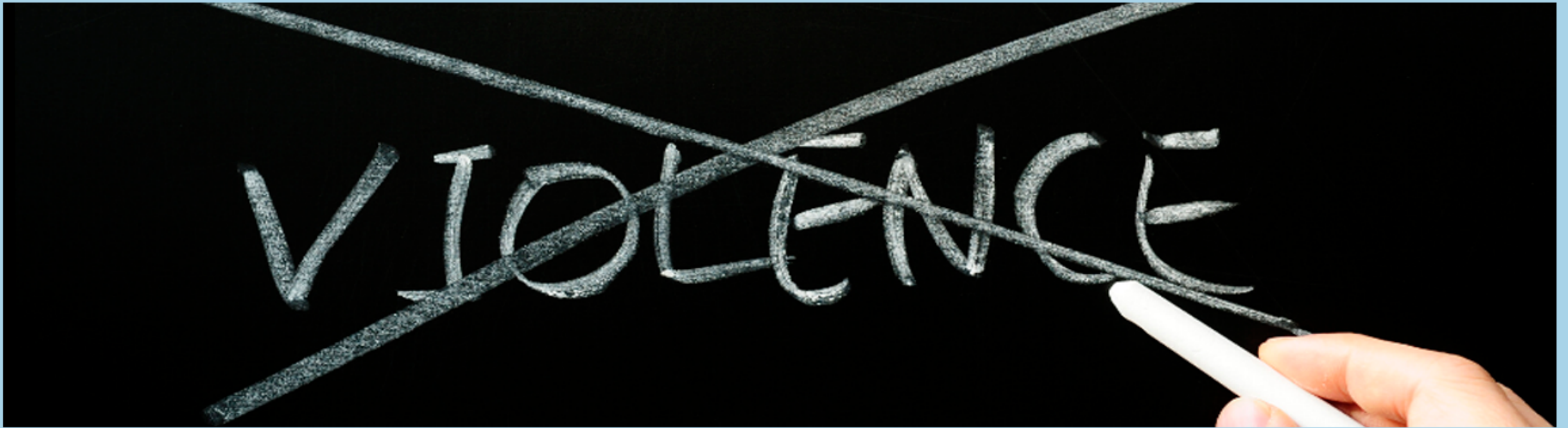
Inhibition of intraspecific aggression is often expressed through **ritualization of fights**. For example, oryx antelopes carefully handle their sharp horns in fights with other oryx but at the same time use them to the full extent in defense against lions.

Even primitive creatures have a similar mechanism. For example, jellyfish have a chemical blocker that prevents stinging a conspecific.

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# THE VIOLENCE INHIBITION MECHANISM IN HUMANS



Humans possess inhibitions of aggression described by the **violence inhibition mechanism (VIM)** model.

This mechanism is based on the **innate aversive reaction**, which is triggered by the observation of **distress cues** from other individuals, such as a sad facial expression or crying.

VIM is a prerequisite for the development of various aspects of morality, including moral emotions such as **empathy and guilt** and the ability to understand the suffering of others even without observing distress cues.

Even in childhood, the activation of this mechanism predisposes the individual to stop committing violent acts.

Psychopathy is a **pathology** resulting from a lack of VIM.

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# SEROTONIN: A KEY REGULATOR OF AGGRESSION



The **serotonergic (5-HT) system** of the brain is responsible for regulating aggression and the functioning of the violence inhibition mechanism.

In animal experiments, activating 5-HT<sub>1A/1B</sub> receptors by medications produced a **selective anti-aggressive effect** without affecting defensive behavior or other forms of activity. The potential of such agents in the treatment of violent behavior has also been demonstrated by limited human trials.

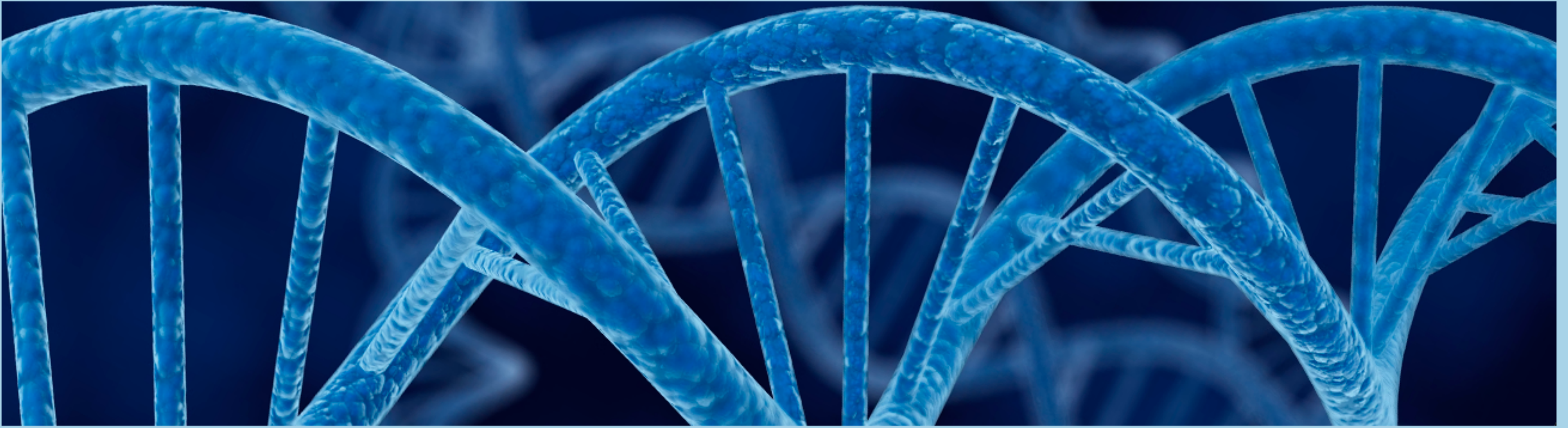
Experiments have shown that **SSRIs**, such as **fluoxetine, paroxetine, and sertraline**, can reduce violent behavior in people with personality disorders, psychopathic traits, alcoholism, and violent recidivism by increasing serotonin levels in the brain (but they have side effects).

**Tryptophan**, a precursor to serotonin, has been shown to reduce aggressiveness and increase generosity in people in some experiments, and its deficiency is associated with increased aggressiveness.

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# GENETICS OF AGGRESSION REGULATION



Studies have shown that some variants of the **HTR1A** and **HTR1B** genes (responsible for 5-HT<sub>1A/1B</sub> receptors) are associated with aggression from alcoholism and increased psychopathy scores.

Some variants of other genes that affect the serotonergic system, such as **TPH2**, **SLC6A4**, and **MAOA** (also known as the "warrior gene"), also create a risk of developing a psychopathic and violent personality.

Psychopathic tendencies are **highly heritable**, and antisocial behavior in children with them is much harder to correct than in children without them.

Carriers of the **low-activity variant of the MAOA gene** are 4 times more likely to commit violent crimes as a result of childhood maltreatment (but carriers of the high-activity variant do not become more violent).

There are suggestions for treating violent and antisocial behavior with **gene therapy** (e.g., targeting the MAOA gene).

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# THE ROLE OF VARIOUS HORMONES IN AGGRESSION



According to the **parochial altruism hypothesis**, the hormone oxytocin promotes cohesion among members of one group, and this only provokes aggression toward members of other groups.

However, this phenomenon by itself explains only defensive, but not offensive, aggression. And in animal experiments, the serotonergic system inhibited aggression independently of the oxytocin system.

Psychopathy can be explained by a dysfunctional interaction between the serotonergic and dopamine systems. Normally, the former modulates the activity of the latter. There is a proposal to treat psychopathy by modulating the activity of both systems with medications.

Testosterone alone is associated with **dominant rather than aggressive behavior**. An important prerequisite for it to cause uninhibited aggression is a decrease in serotonin levels in the brain.

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# CATASTROPHIC CONSEQUENCES OF VIOLENCE



As the researchers note, causing "**ultimate harm**" is becoming more and more realistic with the advancement of technology. It can even be done by a single individual or a small group of people (terrorist organizations, apocalyptic cults), and particular attention should be paid to the problem of creating new pathogens in "basement labs" that can be easily hidden and moved.

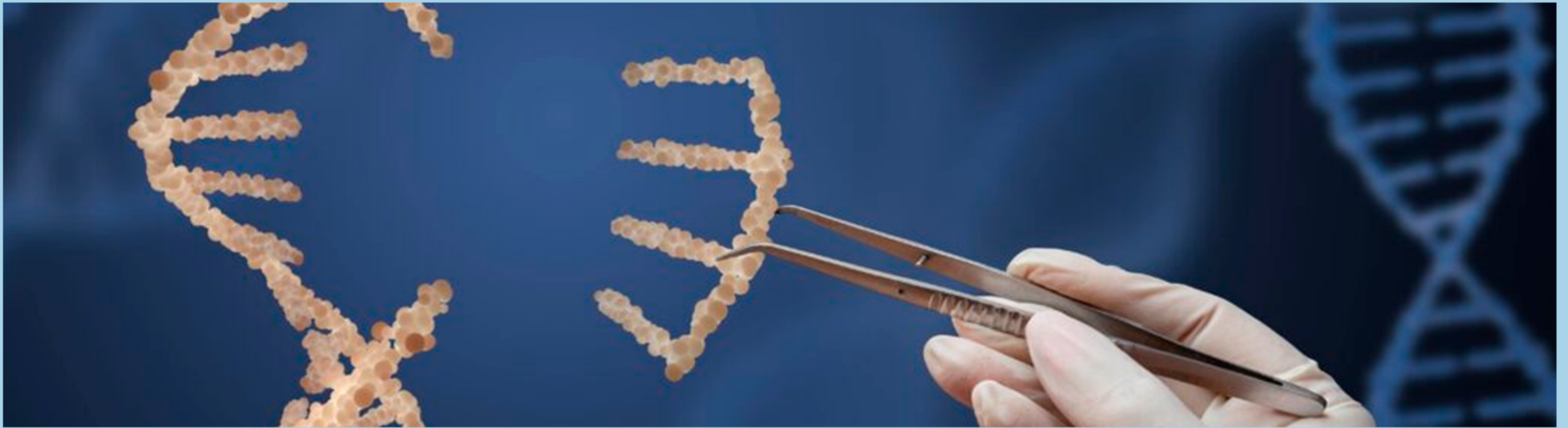
This problem seems unsolvable without drastically expanding surveillance and reducing individual freedoms, which would turn even fairly liberal states into **totalitarian dictatorships**. And the totalitarianism of the future will be extremely resilient due to new methods of manipulating people.

The alternative is **moral bioenhancement**, which can be applied to psychopathic individuals who can easily harm others due to the dysfunction of the violence inhibition mechanism.

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# THE SOLUTION TO THE PROBLEM OF VIOLENCE



The most obvious solution is to create a **pharmacological drug** based on such an agonist of 5-HT<sub>1A/1B</sub> receptors that will have the most selective effect, activating the violence inhibitor without causing side effects.

Another option is a **gene therapy drug** that restores the correct expression of genes associated with the regulation of aggression.

Obviously, **methods for diagnosing the dysfunction of the violence inhibition mechanism** are needed. These may include genetic tests, various forms of tests for psychopathic traits, and other options.

In addition, it is possible to create **automated tools** (AI solutions) for the preliminary detection of psychopathic tendencies when analyzing the behavior and emotional reactions of the individual.

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