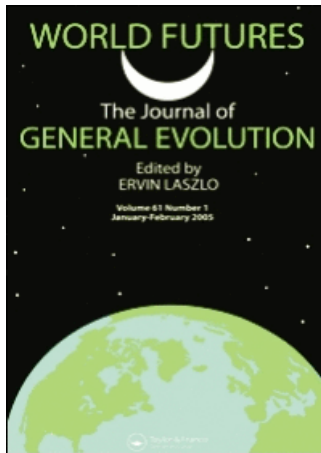


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### Psychobiology of Conflict

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## PSYCHOBIOLOGY OF CONFLICT

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Human aggression and war are mediated by culture and social evolution. Human beings have a wide range of possible behaviors and possible cultural responses to aggression and the possibility of fear. This article analyzes the psychobiological dimensions of aggression and war, and proposes a way of approaching the complex interrelationship between biology, psychology, and culture.

*KEYWORDS:* Aggression, psychobiology, social evolution, war.

The tendency for aggressive behavior among groups is common in human interactions, which contributes to characterize social identities, symbolic bounds, and territorial borders. Although it is not genetically programmed, that tendency is part of humanity's evolutionary device and it develops into different forms of interaction among individuals of the same species or of a different one: fighting, competition, escaping, hostility, subjection, and so on. The emotional equivalents of that behavior are reactions of fear, threat, and anger that arouse a wide range of visceral and humoral answers mediated by the sympathetic and parasympathetic system. Those answers are more simply interpretable in the most evolved mammals: Carnivores like cats and dogs and non-human primates. Darwin highlighted that with great acuteness and method in his well-known research *The expression of emotion in man and animals* (1872), in which the great English naturalist compared the different facial expressions in animals—particularly the movements of facial muscles and the postures of the head as regards animals and man—to clarify the way in which the emotional and somatic equivalents of fear and anger states are structured.

Of course, to observe a competitive behavior in a natural environment is different from observing it in a laboratory. Indeed, if in natural circumstances—that is to say, in the presence of natural known signals and of a competitive behavior in individuals of the same species—the animal can avoid aggressiveness by escaping, in a laboratory animals face each other without any possibility to escape and that renders the situation rather artificial. In other words, the abnormal conditions that cause aggressiveness in a laboratory (prolonged isolation, giving of electric shocks,

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etc.) considerably alter experimental data, rendering them scarcely reliable. Nevertheless, in spite of these evident heuristic limits, the experimental models of the laboratory can supply significant elements to understanding the neurophysiologic basis and the "emotional" equivalents of competitive behavior, helping us to clarify how some environmental conditions arouse abnormal answers that can reach their climax with an aggressive behavior.

A clear definition, which includes the wide range of an aggressive behavior in animals and in humans, has not yet been generally formulated. If, according to the animal world, it is possible to define as aggressive any behavior aimed to harm or to offend other members of the same species, according to the human world to specify which behavior can be defined as aggressive, "violent," and, above all in which situations a behavior can be interpreted as a form of opposition, of defense, or of protest, is rather difficult. Moreover, humankind's several and extremely sophisticated aggressive attitudes often take symbolic characteristics, "culturalized" or explicitly violent expressions, on a psychic level.

### BIOLOGICAL EQUIVALENTS OF AGGRESSIVENESS

On a neurobiological level, violence and aggressiveness are essentially based on the correlation of some sub-cortical structures and of the visceral autonomous system, whereas "culturalized" violence (which is not less destructive) is based on a predominant rule of the cortical structures. Actually, what contributes to determine violence and aggressiveness are not only neurobiological and individual factors but also other collective and sociocultural factors that will be debated onward.

Generally, the acknowledge and the process of the alarm messages, which reveals the imminence of violent acts, are carried out by complex structures as the prefrontal cortex, the amygdala, the hippocampus, the anterior cingulate cortex, and other specific cerebral centers. Nonetheless, the neurobiological equivalents of aggressiveness are to be found, above all, in the limbic system and in the encephalic trunk. For example, several studies show that light electric stimulations of rats' limbic system cause violent attacks against close animals (Moyer, 1976). Moreover, researchers on the influence of the neuro-endocrine system found that testosterone (male sexual hormone) is an important modulator of aggressive behavior and according to some researchers that would explain the greater aggressiveness of man than woman. Indeed, high levels of testosterone have been discovered in particularly aggressive women.

Of course it is not clear whether aggressiveness determines high levels of testosterone or, on the contrary, testosterone causes aggressive behavior. As it often happens, between psychology and biology inexplicable circularities occur. In any case, the data of the most recent research, even if indirectly, leave the open possibility that genetic factors influence aggressiveness, determining problems in cognitive development—for example, attention deficit—that in their turn can lead to an antisocial behavior, as Damasio showed in *Neural basis for sociopathy* (2000).

In a study of historical importance, Kluver and Bucy (1935) discovered that the surgical removal of the amygdala reduces aggressiveness and hostility both

in animals and in violent psychiatric patients. Therefore, there would be some centers, located in the hypothalamus, in the caudate nucleus, in the septum, and in the amygdala, both in animals and in humans, which exercise an inhibitor and exciting effect on aggressiveness. In an already well-known experiment, Delgado (1969) demonstrated that remote electric stimulation of cerebral inhibitor centers is so efficient to stop a bull's charge by half. Instead, changes to the limbic system (archaic cerebral structure that receives inhibitor drives by neocortical areas) can be the basis of the fiercely violent behavior of some individuals. That symptomatology would represent a *dyscontrol syndrome*, at the origin of which there would be a cerebral pathology not well defined (Mark and Ervin, 1970).

Notwithstanding those evidences things seem to be more complex. In the light of the most recent neurophysiologic research, the old localizationist concept of cerebral functions—according to which a specific function would be regulated by a definite area of the brain or by a definite isolated group of neurons—seems largely insufficient. More than “fixed centers” (and therefore of specific centers of aggressiveness), the existence of “functional circuits” formed by different nervous ways and areas, which contribute to the regulation of specific functions, seems more probable. Nonetheless, even if the situation is much more intricate than it did not seem to the scholars who started the first researches on those questions, the doubt on the existence of specific centers of aggressiveness does not necessarily imply the exclusion of more complex nervous circuits that could act in some forms of aggressiveness. By the way, for a long time the experts of cerebral activity visualization (RMNf, SPECT, PET, etc.) have been directing their attention on very well-defined cerebral circuits.

### AGGRESSIVENESS BETWEEN NATURE AND CULTURE

One of the decisive matters in the analysis of human aggressiveness is the importance that has to be assigned to innate factors and to motivational and environmental ones. Indeed, it is necessary to wonder whether aggressiveness has to be considered as an instinctive behavior, which is part of the animal and of human nature, or as a behavior dependent by other factors, such as motivation, frustration, imitation, and learning. According to instinctual theories (among which there is psychoanalysis) aggressive behavior lives out of spontaneous dynamics: charges of aggressiveness slowly accumulate within the organism until it reaches limit-levels that allow a discharge through an aggressive action. According to Lorenz, the father of ethology, aggressiveness is similar to any other instinct: it starts to act through a stereotyped behavior, caused by an internal drive and aroused as a consequence of a specific stimulus. But what happens when the accumulated internal energy increases without the satisfaction of a specific (alimentary, sexual, aggressive) drive, because of the lack of a causing stimulus or because the specific activity is blocked? It is probable that the drive increases until such levels that any other substitutive nonspecific stimulus can cause its discharge; or that, lacking environmental stimuli, that drive explodes into aggressive and non-reactive forms and expressions.

But what is the meaning of intraspecific aggressiveness? In evolutionist terms, it would give advantages connected to the possession of territory, a useful sexual selection, self-defense, the care of the young, and so on. According to ethologists, aggressiveness would be subjected to the control of inhibitor mechanisms until it becomes dysfunctional or dangerous for the species. After examining wide case histories of adverse and frustrating situations coming from the inhibition of answers directed toward an end, Dollard and other scholars (1939) highlighted the importance of reactive and frustrating situations in the origin of human aggressive behavior. Nonetheless, one has to wonder: Which characteristic and which nature have the relationships between frustration and aggressiveness? That is to say, do we react with aggressiveness as a consequence of frustrations or do frustrations have autonomous motivational dynamics? The second possibility seems more plausible: the emotive status constitutes the necessary motivation to produce an aggressive behavior. Emotiveness—adaptive function caused by sub-cortical structures—represents the necessary field to pass from frustration to aggressiveness (LeDoux, 1998).

Besides the natural aspects of aggressiveness, cultural causes have been analyzed, too. Here things do not seem easily interpretable. Several researches on twins and adopted children, which had the object to value the prevalence of aggressive behavior, have not proved clear and coherent results. Nor has research on social environment stressed that poverty, overcrowding of metropolitan suburbs, the lack of spaces for any form of recreational activity, and lack of hygiene always cause a sensation of abandonment and desperation, which can arouse aggressive behavior as an instrument of escape and of social revenge. A similar role is given to wars, hunger, and diseases that can be at the origin of even more evident events of criminality, during economic crises.

Freud (1905) who initially considered aggressive behavior as a reaction to the frustration experienced by a person during the research of pleasure (e.g., the child to whom the satisfaction of a need that loosens tension, otherwise unbearable, is denied through strategies of frustration and aggressiveness) formulated in a successive season of his research the theory of the “death instinct”: *Thanatos*, antagonist of life instinct, *Eros* (1930). In this structure love, or *Eros*, with its *élan vital* is opposite to the instinct of death that has the function to make the individual regress to the initial inorganic state. According to that model, on the one hand aggressive behavior would have the goal to lead this (otherwise self-destructive) force out of the organism and on the other hand to reduce drive tension.

The great Viennese psychoanalyst never stopped to consider aggressiveness as an innate characteristic of human life. In his point of view, war reveals the primitive man who is inside of us: “he who” compels us to be heroes; who prevents us from serenely accepting the idea of death; who transforms the stranger into the enemy who we will have to kill; who, in the end, obliges us to accept the death of dear persons (1915). This *derealization of death* contrasts with the positive work of mourning, from which typically human feelings arise. In December 1914, at the dawn of World War I, in a letter to his Dutch friend and psychiatrist Frederik van Eeden, published in German on 17 January 1915 by the “The Amsterdammer” review, Freud writes:

Dear colleague, under the influence of this war I am taking the liberty to remind you [of] two statements which psychoanalysis has put forward and which certainly have contributed to render it unpopular among the public. Since the study of dreams and of missed actions, besides of neurotic symptoms in sane persons, psychoanalysis has drawn the conclusion that evil, savage and primitive drives have not disappeared at all but they keep on living, even if repressed, in the unconscious mind of every single individual, waiting for the occasion to reactivate themselves. Moreover psychoanalysis has taught us that our intellect is something weak and dependent, toy and instrument of our drives and our affects and that we are compelled to act sometimes with intelligence and sometimes with stupidity, according to the will of our intimate attitudes and our intimate resistances. Well, look at what is happening in this war, look at the cruelties and injustices of which the most civil nations are responsible, the bad faith with which they play in front of their own lies and iniquity; and in the end, look how everybody has lost his capability to judge with rectitude: you must admit that both the statements of psychoanalysis are right. (Musatti, 1976, p. 121)

Freud sees in humankind primitive destructive drives ready to arouse when the affective bonds of community lack. However, what makes improbable that a human community subjects its drives to reason is the natural herd attitude of the majority of men. According to Freud the salvation lies in the (precarious) process of civilization. Certainly, the drives of death are far from being neutralized by the drives of life; and nay, an extreme interiorization of destructive drives is not to be hoped for. Nonetheless, according to Freud a civilization must above all consider the *development of intellect* and the *interiorization of aggressiveness* with all the advantages and consequent dangers. War is opposite to all the psychological conquests reached through civilization. It is for this reason that it favors the civilization that acts also against war.

### **AGGRESSIVENESS AS IN-ESSENTIAL CONDITION OF WAR**

If aggressiveness is a biologic, individual and internal to the group phenomenon, on the contrary, war is a phenomenon of cultural evolution. Indeed, during war cultural influences, which oblige to kill, predominate on biological determinants, which represent also in humankind a restraint to destructiveness.

Differently from war, aggressiveness is essential to survival, to evolution, to adaptive functions, to the psychological growth of the child: indeed, he or she has to explore the environment, value him or herself, discover the limits as far as he or she can venture.

Eibl-Eibesfeldt (1999, p. 54) has meaningfully written “(. . .) it is not aggressiveness which has developed in order to constitute a hierarchy of rank, but it is the latter which has developed as a mechanism to face the internal aggressiveness of the group, aggressiveness, which in other points of view, is favorable.” According to the great Austrian ethologist, the nature of war is cultural, whereas aggressiveness is an innate drive: it can be directed toward the evolution like toward self-destructiveness. What drives humankind toward it are some criticalities of system as the unlimited demographic growth, the devastation of environment,

the destruction of biodiversity, exaggerated competition among humans, the threat of mass destructions, the violent refusal of tradition, and extreme indoctrination.

Although by now the Darwinian principle of the struggle for survival (the only one that allows the animal species to progress) is firmly acquired, in the course of the phylogeny, all the great predators have had to develop a strong inhibition to use one's natural weapons against the members of the same species, under pain of extinction. This strong and systematic inhibition is almost absent in humankind, without natural weapons that allows one to kill rapidly a big prey. In other words, the history of humankind has lacked a selective pressure that urged the rise of mechanisms that inhibited the killing of individuals of the same species. Only the invention of artificial weapons succeeded in changing completely this balance between the capability to kill and social inhibitions. In this way violence, exercised through weapons that anonymously strike from a distance, spread without any restraint. During the centuries, ethical values as tolerance, solidarity, brotherhood, and so on have not succeeded in relieving human destructivity, provoked by archaic instincts as the defense of one's group and one's territory against any threat or aggression. When inhibitor mechanisms are weakened because of a cultural change, the conflict among the members of a group transforms into war. Then, if on the one hand individual aggressiveness among the members of a group is controlled by phylogenetic adaptations to avoid a destructive escalation, on the other hand the aggressiveness among groups is expressed by wounding and killing the enemies through the use of weapons.

But modern war is not carried out only through the use of rapid weapons that kill at a distance: it is performed also through an indoctrination aimed to degrade the enemy to an inferior class. This demonstrates how aggressiveness among groups has been transformed into a product of cultural evolution, even if in it, innate tendencies are used. Indeed, modern war is all built on organization and on discipline. In it the use of weapons, which rapidly kill, allows the elimination of the enemy before he sends signals or appeals that can inhibit aggressiveness. In order to prevent those appeals to the fighters, the enemy's image is interjected as it was a hunting prey or an inferior being. The goal is to avoid the culturally mediated inhibitions of aggressiveness that could neutralize the full development of the push toward war. Particularly, in the conflicts that imply short distances, men could perceive signals of subjection and appeals that cause feelings of compassion, with a consequent restraint of hostile behavior.

Now, the fact that the mechanisms of the inhibition of aggressiveness toward one's fellow humans have a psychobiological basis was an hypothesis formulated by Freud. Through an ethnographic comparison, he had noticed that among different primitive populations the warriors who killed their fellow men at first were considered impure and then, in order to be reaccepted by their society, they had to carry out precise rites of purification. "From all these prescriptions—Freud noticed—we decide that in the behavior towards enemies, also other drives are expressed besides the exclusively hostile ones. Within them we notice expressions of regret, of respect for the enemy, bad conscience to have deprived him of life. We could even say that also among these savages the commandment *do not kill* is alive" (1913, p. 45, emphasis in original).

Among the Nilotic tribes of Ethiopia, feelings, which animate a victorious warrior, are represented like in other cultures by a mixture of blame and pride for the action done: on the one hand, because of the admiration by the belonging group, on the other hand because of the fear of the victim's spirit and of the revenge of his group. The warrior, who has killed, is obliged to withdraw in a hut while women dance around him to propitiate the rebirth of a normal social life. In some cases, the winner even assumes the name of the victim, who in this way symbolically relives. In *Ethology of war*, Eibl-Eibesfeldt reported a considerable number of examples that indicated the innate inhibition to kill, showing as it is subjected to another filter of rules, which allow to kill the enemies and which is although incapable to cancel "the filter of biological rules" (p. 54).

In the traditional conflicts, in which the direct contacts prevail, he who finds himself in front of an enemy generally does not deny his human nature. This often causes an interior conflict, lived as a sort of "bad conscience." For that reason, at the beginning of the conflict, when the interdiction to kill is still strongly present, in order to exceed it, strategies of *psychologization of conflict* are adopted to dehumanize the enemy and to interrupt any interpersonal contact: from the prohibition to talk with the people of the enemy tribe, among different primitive populations, to the most recent sophisticated strategies of government of civil population in order to separate the operations of war from the control of consciences (e.g., orders "not to fraternize," use of weapons at a distance, prohibition to listen to the enemy radio).

During World War I, there were many episodes of fraternization among soldiers of opposite armies that could put the same goals of the war in danger, if the organized hate failed. This says a lot about the ambiguity of human behavior: on the one hand warriors fling themselves on each other putting into the field the destructive (both innate and caused by indoctrination) drives to fight; on the other hand, they start to be in conflict with themselves when, in hand-to-hand fighting, they personally gain the experience of killing.

### **THE PSYCHOLOGIZATION OF CONFLICT AT THE TIME OF "TOTAL WAR"**

War as armed conflict among groups is as ancient as humankind. But if in the Stone Age, men fought for the conquest of hunting and cultivable territories with rudimentary tools, today war has assumed complex and refined forms.

Then, if prehistoric populations confined themselves to sudden raids, aimed to come upon and surround the enemy with tactics that remind one of hunting, contemporary armies face each other in what has the characteristics of a "total war." As an instrument of international policy, war is aimed to subordinate the enemy to one's will. Some scholars even define it a creation of "civilization," like the very well-known "continuation of policy with other means" by the great strategist K. von Clausewitz (1970).

Differently from traditional conflicts, the absolute war, caused by conflicts among states, has attached an enormous and increasing importance to ideological and psychological aspects. During the war, compulsory military service can work well only if it is preceded by a preventive psychological war. The Cold War (which

remained cold only because of the risk of a nuclear holocaust) was a long conflict, which favored psychological and ideological war, more than any other one. Its goals were the weakening of the enemy opposition, the disposition to understand the enemy's ideology, and at the same time, to reject his system of values. For this reason, traditions that represent the bearing structure of the enemy society must be acquired, before anything else. Moreover, they must take advantage of the extreme tension between the aspiration after individual freedom and the power of the State, conflict that has its origins in the aspiration after the rank and in the rebellion against domination, linked to that aspiration. Besides, it is possible to encourage people to disobedience simply by offering them another authority as a firmer alternative. Even the prophets of anti-authority put their models to honor on a pedestal.

Such a (non-bloody) war can be won by the dominating group with the insinuation in enemies' minds of its way of thinking, its codes, its ideologies. Slogans are the typical weapons of ideological conflicts, as the German word *Schlagwort* (from *Schlaghen* = to defeat and *wort* = word) clearly says. Those conflicts can be incubators of a "hot" war but they are more often the simple human form of the conflict itself, because they allow a critical evaluation of the "enemy" point of view and can lead to a critical view on the belonging communities, to spaces of plurality and even to cultural exchanges.

In times of war, the social-political dominating group tends to sharpen the relationship command-obedience, characteristic of all the state organizations. The command-obedience is the continuation—with different, more intense and total means—of command-obedience or normal relationships between representatives and represented legislators and individuals, reduced to atoms of the "general citizenship." During the war, these modern relationships recall primordial expressions like the enthusiasm for the fight and that "sacred" shiver of patriotism (acutely analyzed by K. Lorenz) that shakes those who take part in mass political demonstrations and that physiologically corresponds with the contraction of the hairs erectors muscles. We could ironically say that the enthusiastic mass makes its fur (which it does not have anymore) stand on end and it interprets it as a shiver of emotion.

According to the dominating groups war is not pathology but function. To overcome it means first of all to understand this function. It is not sufficient to show men the cruelties of war to make them give up. Then both the ideas of "tearful pacifism" (about which A. Huxley already talked) and the ideas of the "good savage" with idyllic animal societies, which should be completely demystified, are perfectly vain.

A culture of peace must remove every anthropocentric prejudice and admit the instinctual reality that influences our behavior. The proof that, above all, nature adopts the way toward the nonviolent solution of conflicts is given by the animal world. Indeed, the fights for the rank and territory among vertebrates only rarely lead to the killing of an individual of the same species, because the conflict assumes ritualized forms and only a trace of the original destructiveness remains. The way to pacification is always open, because signals of detente neutralize the spreading of violence.

In conclusion, war is not the destiny of our species. Peaceful living relationships can vouch for life and for individuals' and communities' goods, exercising an

essential evolutionary function that instead, at war, partially finds its destructive end. A balance founded on fear is, for its own nature, strongly precarious. It is always going to break. It is a source of recurring unbalances and concretely contains the danger of the world civilization's self-destruction.

At present, the level of risk is very high. Indeed, it has been calculated that in the world, there is more explosive material, in pounds per person, than food (Sivard, 1980). In front of these evidences, it seems clearer and clearer, on the one hand, how good intentions are vain and on the other hand how the sole desire of peace is insufficient. As expression of the cultural evolution, war can be overcome only through culture. That is to say, it is necessary to change some universal human dispositions—aggressiveness, the disposition to defend the group, the aspiration after domination, territorial tendency, the disposition to answer agonistic signals of extraneous people, and also the universe of fear caused by war—into a pacific order of individual and social relationships. If, in order to cause a war, an enormous and obsessive indoctrination, which wins the biological inhibitions and traditional resistances, is essential then in order to defend or create pacific relationships, a non-unnatural education, founded on vital biological dispositions, on needs and choices of cooperation and of a different competition against other biological phenomena like aggressive instincts and irrational fear, is necessary.

## REFERENCES

- Clausewitz, K. 1970. *Della guerra*. Milano: Mondadori.
- Damasio, A. 2000. A neural basis for sociopathy. *Archives of General Psychiatry* 57: 128–129.
- Darwin, C. 1872/2006. *The expression of the emotions in man and animals*. Whitefish, MT: Kessinger Publishing.
- Delgado, J. M. R. 1969. *Physical control of the mind, toward a psychocivilized society*. New York: Harper & Row.
- Dollard, J., N. E. Miller, L. W. Doob, N. E. Mowrer, R. S. Sears, et al. 1939. *Frustration and aggression*. New Haven: Yale University Press.
- Eibl-Eibesfeldt, I. 1999. *Etologia della guerra*. Torino: Boringhieri.
- Freud, S. 1905/1970. *Tre saggi sulla teoria sessuale*. *Opere di Sigmund Freud*, Vol. 4: 443–546. Torino: Boringhieri.
- Freud, S. 1913/1975. *Totem e Tabu*. *Opere di Sigmund Freud*, vol. VII. Torino: Boringhieri.
- Freud, S. 1915/1976. *Considerazioni attuali sulla guerra e sulla morte*. 2. *Il nostro modo di considerare la morte*. In *Opere di Sigmund Freud*. Torino: Boringhieri.
- Freud, S. 1930/1961. *Civilization and its discontents*. New York: Norton.
- Kluver, H., and Bucy, P. C. 1939. Preliminary analysis of the temporal lobes in monkeys. *Archives of Neurology and Psychiatry* 42: 979–1000.
- LeDoux, J. E. 1998. *Il cervello emotivo*. Roma: Baldini & Castoldi.
- Lorenz, K. 1969. *Il cosiddetto male*. Milan: Il Saggiatore.
- Mark, V. H., and F. R. Ervin. *Violence and the brain*. Harper & Row, New York, 1970.
- Moyer, K. E. 1976. *The psychobiology of aggression*. New York: Harper & Row.
- Musatti, C. 1976. *Avvertenza Editoriale*. In: *Opere di Sigmund Freud, 1915–1917*, vol. VIII. Torino: Boringhieri.
- Sivard, R. L. 1980. *World military and social expenditures*. Washington, D.C.: World Priorities.