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ANTHROPOLOGY OF AGGRESSION: MORE THAN A CENTURY OF RESEARCH

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Anthropological approach

The history of anthropological research on aggression is long and has been an exclusivity of psychiatrists for centuries. Lombroso published at the end of XVIII century two major works, whose titles will clarify from the start the author's meaning. The first one, "The criminal – the inborn delinquent – the morally insane – the epileptic" details all possible crimes one might commit, and the ways the society is dealing with them during that historical epoch (Lombroso, 1887). The anthropological theories of Lombroso went far beyond with his published atlas and with the descriptions he made of the anthropological features and of the somatic parameters of criminals of certain nations (Lombroso, 1887). He studied 383 skulls of criminals of the time, making even autopsies to them and describing pathological changes in the viscera of the individuals, not excluding stomachs and so on. His atlas over the "Criminal individual" is very sophisticated for the time: it was concentrated over the skulls, but very intuitively, the author picked up the relation between tattoos and antisocial behavior (Lombroso, 1887). The relation between tattoos and aggression or antisocial behavior is actually on the center of large debates and research (Cardasis, 2009). Tattoos are not the only external body visible particularity presumably related to criminality and antisocial behavior; skinheads and Skinhead movement has been blamed, among other, even for microcriminality (Menicocci, 2012).

What remains from anthropological theories of Lombroso and others are of course not the skull parameters; yet the actual trend is reinforcing the anthropological point of view. Instead of speaking about 'small' or 'big' cranium, actual research is concentrated in much more sophisticated – yet still anthropological – parameters, such as the size of amygdala and other surrogates of brain structure and/or activity (Matthies, 2012). If some authors support the idea that a small amygdala leads more easily to aggression, others might hold a contrary opinion; but this is not the only contradiction found within specialistic circles (Whittle, 2008). Researchers obviously might not converge on their conclusions, as it is logical; anyway the size of prefrontal regions and of amygdala is largely discussed, with cingulum and other limbic regions regaining importance in the literature (Boes, 2008).

The amount of data collected and discussed in the above mentioned studies, and many others, were not dealing with damaged or injured brain, i.e. in persons without any traumatic lesions. In fact, posttraumatic personality changes and aggression is another important field of research.

Developmental theory

Developmental theories insist that age of starting the antisocial activity and the persistence of "microcriminal" acts are important clues that will determine the gravity and the persistence of the antisocial behavior, as well as the coexistence of interpersonal and social problems of the individual. A conceptual distinction has been made between a life-long lasting antisocial behavior, and an antisocial behavior manifested only and exclusively during adolescence (Moffitt, 1993). Such a distinction contrasted with other criminological views, which consider the trend for antisocial behavior as a constant independent from the age.

Developmental theories do suffer the fact that studies generally are started at a late moment of someone's life, i.e. in individuals that, having manifested their aggression and antisocial behavior, already have reached a certain age. The actual focus and the consistent bulk of studies regarding the bullying phenomenon inside schools might be a compensation of the previous lack of interest or of sensible medical and/or psychological studies, aiming at detection of potential antisocial traits in the early childhood. Bullying was initially considered as a moral issue that had to be dealt with only from schools and teachers. That was obviously not true: bullying resulted being much more than that (Leblanc, 2001). When defining bullying as direct (open attacks) and indirect (social isolation, exclusion of the victim), it might become difficult to find any substantial difference between the concept of bullying and that of the aggression generally. However, power imbalance is a characteristic in the process of bullying, especially inside schools (Leblanc, 2001). Aggressive behavior, on the other hand,

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will not necessarily be denoted through such a feature.
According to Moffitt's findings, there should be a criminogenic environment, giving rise to a stable aggressive model of behavior, and such an environment will find its prey in an individual with 'slight neuropsychological deficits'. Adolescents that demonstrate a life-course-persistent antisocial behavior, live in high-risk environments. Disadvantaged families, socio-economic hardship, inconsistent parental figures and attention deficit disorder, are all of them considered as important risk factors (Ferguson, 1996). Moffitt goes even further, through describing the life-course-persistent behavior as a kind of psychopathology per se. On the other hand, the antisocial behavior that lasts only during adolescence has as its main characteristic the lack of continuity.
Both models (life-course-persistent and adolescence-confined) somehow are related to the imprudent parenthood: Adelaide Johnson coined the term "superego lacunae", which was embedded deeply in the psychiatric and psychological research of delinquency (Meloy, 2001). Thus, psychodynamic hypotheses of conduct disorder and childhood delinquency suggest that children unconsciously act out their parent's antisocial wishes (Kaplan, 2008). If parents are not culpable for everything, of course, according to the psychoanalytic sources, they should play an important role in the entire process.
The classification offered from Moffitt has been generally accepted, albeit other authors have modified it substantially. There exist, in fact, another category of delinquents, the so-called repentant group, composed from individuals that manifest antisocial behavior early during their developmental process (before adolescence) but withdraw from it thereafter (Loeber, 1998). Another drawback of the Moffitt's model has to do with female delinquency, i.e. girls that show a completely another developmental trajectory in the criminal career, mainly defined as a late-onset one. This might quite well not be a female characteristic in the entire issue, because an adult-late-onset delinquency has been described from several sources even for male individuals (Zara, 2009; Wiecko, 2012).

Neurobiological proof of assaultiveness

Posttraumatic behavioral changes have been at the focus of several studies since 1848, when the first case of posttraumatic psychopathy in the modern time was registered. Phineas Gage survived a severe head trauma with no amnesia, no decline in his intelligence, without any speech disorder nor any motor deficit (Damasio, 1994). The irrespective, insolent and asocial behavior this famous patient showed after the head trauma surprised his contemporaries. Afterwards, the posttraumatic behavioral disorder depicted in the Gage case, became the neuropsychological model of social deviations of behavior and of the medical interventions that were justified on those basis (Macmillan, 1992; Macmillan, 1996). In this case wide damages to the left and the right frontal cortex were documented, and the concept of acquired psychopathy was translated to a biological model of antisocial and/or asocial behavior. This amount of data raised the question if violence and antisocial behavior might have a neurobiological basis. Be it so, the entire issue could become simplified in terms of neurotransmitters and disbalance of the latter. Another famous case of posttraumatic personality changes was that of the French poet Apollinaire, although in this case the temporal lobe seems to have been implied (Bogousslavsky, 2003). Apart from the poet's case (whose personality changes were completely of another type, far different from the theme we're dealing with), in general, authors converge upon the frontal lobe postlesional changes (mainly posttraumatic); thus if amygdala is implied in antisocial or aggressive behavior, it should or must be an inborn or developmental issue, which differs from the posttraumatic equivalent, when the frontal lobe comes forward.
Psychobiological and neurobiological influences have been implied in aggression generation and assaultiveness. Although internalizing disorders such as anxiety and depression might seem quite opposite to externalizing disorders such as conduct disorder and oppositional-defiant disorder nevertheless has been as well suggested a high chance that both these type of disorders might accompany each other (Zoccolillo, 1992). Conduct disorder and depression have a high comorbidity, and questions are raised (a) if major depression might give rise to aggressive actions; (b) if conduct disorder and the problems it creates might cause dysphoria and demoralization; (c) if other overt or covert factors influence the symptomatology.
A decreased serotoninergic activity seems to be related with impulsivity and aggression, as well as with suicidality. It was Raleigh who studied initially the role of serotoninergic medication on aggressive behavior, through using or agonists of serotonin [tryptophan, fluoxetine] or antagonists of this neurotransmitter [cyproheptadine] (Raleigh, 1991). From the neurobiological point of view, auto- and hetero-aggression (respectively translated into suicide and [attempted] homicide) are related to a low concentration of brain serotonin. Serotonin is a neurotransmitter whose main synthesis is embedded in the brainstem; nevertheless axonal structures sourcing therein reach, among other, forebrain structures (i.e. frontal lobes and orbitofrontal cortex).
Amygdala, an almond-shaped nucleus located bilaterally in the temporal lobes, as mentioned above, has as well been at the centre of different studies. Its role in the emotional and vegetative life as a substantial part of the limbic cortex has been studied since the Klüver-Bucy syndrome was described in humans, after an initial sketch of the symptomatology was detected in monkeys (Lilly, 1983). This syndrome is an expression of hyperorality

and hypersexuality; yet lesions of temporal lobes were initially found to have a taming effect in animals since Goltz, a famous German physiologist of the XIX century, published several papers over localization value of different lesions inside the brain (Pauly, 2005).

Surgical removal of both amygdalae was as well experimented in high primates more than half a century before (Morgane, 1957; Schwartzbaum, 1960). The behavioral changes following bilateral destruction of these nuclei led to the idea that amygdalectomy might be a solution for refractory aggressive behavior. Although the procedure has serious ethical implications and its application in human patients is very restricted, some neurosurgeons still perform it (rather in the form of amygdalotomy) through stereotaxic approaches (Fountas, 2007).

It is worth mentioning that neurobiological theories of aggressive behavior are not restricted only to cortical of subcortical territories; of course, the hormonal changes registered when testosterone or cortisol are implied, might quite well be not peripheral-originated, but rather as a disturbance of the hypothalamic-hypophyseal axis, translated in the form of a disequilibrium in the target endocrine gland (be it the testicle, or the adrenal gland). Thus, the pharmacological or surgical castration has been found effective in decreasing aggressive behaviors in different mammals. Low cortisol levels have as well been related with persistent antisocial and disruptive behavior (McBurnett, 1999). Cortisol and testosterone, both playing their part in the complicated aggression behavioral mechanisms, seem also to be interrelated, with basal levels of the second hormone predicting the changes of the first one (Mehta, 2008).

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