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BEHAVIORAL NEUROBIOLOGY IN FORENSIC PSYCHIATRY: PROBLEMS AND PROSPECTS

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Introduction: In recent decades, considerable progress has been made in the study of the biomolecular bases of violent behavior, so much so as to rekindle a heated debate on the notions of “free will” and “criminal responsibility”.

Aims: To analyze the results of neurobiological research on violent behavior and to investigate the possible repercussions of their application in the field of forensic psychiatry.

Methods: Starting from the analysis of a recent judgment by an Italian Court of Appeal, which reduced the sentence of a convicted murderer on the basis of he was a carrier of some alleles thought to be risk factors for the development of violent behavior, we reviewed the scientific literature on this issue.

Results: A growing number of studies have investigated the relationship between genetic polymorphisms and violent behavior. In particular, recent studies have indicated that the principal role is not played by mutations of single genes, but by modifications of several genes and their expression (epigenetics).

Conclusions: While the presence of some specific polymorphisms may be associated to a higher risk of enacting violent behaviors, the phenotypic expression of this “vulnerability” should more properly be interpreted in terms of interference between the genome and the environment. From a forensic psychiatric standpoint, however, it must be remembered that the necessary condition whereby a mental disorder can take on the meaning of “insanity” is that it has caused, in the specific case, such “psychopathological functioning” of the acting subject as to compromise his capacity for cognition and/or volition.