Retaliatory murder: Traditional reasons or brain dysfunction?

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INTRODUCTION

The feud or retaliatory murder is the subject of study and research of many scientific fields. It is an unwritten law system, which, based on historical and forensic criteria can be seen as the echo of a distant past and more specifically as a survival of an ancient way of justice, which introduced the need to penalize the perpetrator of a crime with a penalty should be proportionate in nature and severity to the evil committed. This view is the first rational way of administering the law in history. In Mediterranean cultures, the establishment of the fundamental juridical principle of retribution or Taftopatheias or Antipeponthotos, initially took the form of a religious requirement, acquired prestige and froze the communicants of law (Ksiritakis, 2011).

METHODOLOGY

Methods

We conducted research (2008) on a revenge murder, who committed in 1987 in Heraklion, Crete. The tools of our investigation was the **fieldwork**, the **reconstitution of the story** of the murder, through court documents and archival material from newspapers of the time, and **the interview of the offender and his close relatives**.

Description of the case

• The perpetrator of the murder was 22 years old and grew up in a family, which for many years was mourning the death of his father's brother. By adulthood, the young perpetrator of the murder had **aggressive behaviour** to others through the use of sharps. His relatives have characterized him as a person **irritable** and **nervous**, however, though, and labor. After his military service he was informed from his friends so the name of the person, who killed his uncle, and the pattern of murder. It is said that accepting prompts from the community around him to commit a similar murder against a person who would belong in the family of his uncle's killer and would even have the same last name as that of the offender. At that time, therefore, sought various individuals who had a common surname with the perpetrator and chose, finally, to murder in a decisive way the easier than prospective victims, on the basis of a well-organized plan. It is important at this point to mention that the victim was paraplegic and distant relative of the murderer of his uncle, two events which are opposed to the strict laws of the phenomenon of blood feud.

• In court, the young perpetrator of the murder justified his action as a result of long-term grief and emotion of that moment. The victim's family turn to the justice, desiring legitimate and fair consequences of such act, by no means the continuation of the phenomenon of blood feud. No extenuation not taken into account by the justice (crime an impulse). The court punished the offender by life imprisonment.

CONCLUSIONS

• The emotional deficit which is correlated with the correspondent dysfunctions of the cerebral cortex and the appropriate genetic predisposition may lead a person to a crime, regardless of the rules prevailing in the society in which it develops.

• During the trial of the case under study (1987), the court did not allow the claim of the defence to examine the offender by a psychiatrist.

• The judicial committee should, perhaps, to recognize extenuating circumstances and reduce the sentence of life imprisonment, as the dysfunctional brain of the accused, under the pressure of a social environment claimed revenge as a means of social recognition, led him to a disastrous decision and practice.

• This fact highlights the deficits in the decision-making process of the committee and also demonstrates the gap in the methodology of Greek justice. The lack of contribution of Neuroscientists in adjudicating cases, by examining the genetic predisposition and the brain activity of the offender, continues to this day. We consider significant the progress in the Greek legislation in this field, a change which has been already preceded in the judicial systems of other European countries.

RESULTS (Neuroscientific hypothesis)

Table 1: Hypothesis reconciling the behavior of the offender with specific genes that are examined by the Forensic Neurosciences in crime cases.

Genes	*Negative polymorphism/VNTR*	*Neurobiological Mechanism*	*Dysfunctional behaviors*	*Offender behaviors by individual background*
Gene that promotes translated Gene SCL6A4 (serotonin transporter)	***Allele short of 5HTTLPR polymorphism***	***Reduced expression (30-40%) of the serotonin transporter, thus reducing by half a serotonin transporter***	***↑ domestic stress → ↑ probability of antisocial, violent, impulsive behavior***	***Antisocial, aggressive, impulsive behavior***
Gene SCL6A4 (serotonin transporter)	***Allele 12 of STin2- VNTR***	***Greater capacity gene transcription***	***↑susceptibility to schizophrenia***	***Deficient cognitive and emotional reaction (Second-degree relative with schizophrenia)***
Gene COMT	***Allele (L-low) Met rs4680-SNP***	***Reduction equal to four times of the activity of the enzyme COMT→ deactivating slower catecholamines***	***Aggressive behavior observed in mental patients and animal models***	***Aggressive behavior***
Gene MAOA	***Alleles 3,5 (MAOA-L) of MAOA - u VNTR - VNTR***	***Reduced catabolism of catecholamines in the brain***	***Violent and aggressive behavior as an expression of fear in potential social exclusion***	***Murder as an attempt social confirmation***
Gene DRD4	***Allele with 7 repeats of DRD4 – 1/7 - VNTR***	***Blocking gene expression → influence on the stability of mRNA and its translational capacity***	***Aggressive, impulsive, hyperactive (regardless of IQ) behavior in response to external stimuli***	***Aggressive, impulsive behavior***

Figure 1: The family tree is used in clinical practice of genetics, medicine, psychology. Through this it is possible to determine the genetic factor of a disease, and how it is propagated within a family. Geneogramma, as is called the clinic anthropology, is the representation of a family tree, indicating information about family members and their relationships for at least three generations, so as is perceived and experienced by one or more family members.

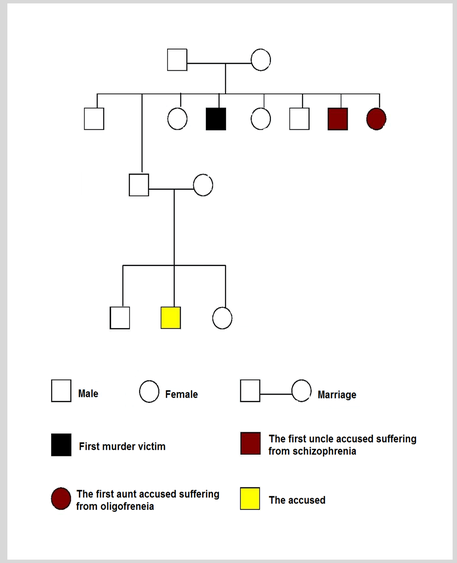

Figure 2: The black spots indicated in the red frame are amygdales brain, which are almost broken. This fact indicates the utter fearlessness and overall emotional disability (MRI). Based on the Damasio' s somatic marker hypothesis, as well as imaging data of brain function in solving problems of morality (Greene, Moll, Sanfey), the deficits in emotions were the root cause of the act of the accused, because of his risky choices and his behavior during the organization and the realization of the murder. Except for amygdala, the areas most likely characterized by deficient function are ventromedial prefrontal cortex, cingulate anterior and cingulate posterior.

Figure 3:Hypothesis based on Default Network (ToM): This network includes the medial prefrontal cortex and the posterior cingulate cortex, regions that are associated with self-reflection and autobiographical memories and which become connected into a synchronously active network when the mind is allowed to wander. For schizophrenia patients, the default system was both hyperactive and hyperconnected during rest, and it remained so as they performed the memory tasks. The patients were less able than healthy control subjects to suppress the activity of this network during the task. The less the suppression and the greater the connectivity, the worse they performed on the hard memory task, and the more severe their clinical symptoms, which lead them to wrong decision-making, distortion of reality and inappropriate behaviors. It is also known that in a recent study healthy subjects represented with a greater activity in various parts of ToM, empathy and default mode networks during Moral>Non-moral decision-making (Reniers et al., 2012). Besides there was a trend for high scores on primary psychopathy to correlate with decreased M>NM BOLD activation in an area extending from DLPFC to MPC. The default system is also overactive, though to a lesser extent, in first-degree relatives of schizophrenia patients who did not themselves have the disease. This suggests that overactivation of the default system may be linked to the genetic cause of the disease rather than its consequences. In this case, two second-degree relatives of the accused (his father's brother and sister) have been hospitalized since 1960, because of schizophrenia and oligophrenia respectively. This data means that the offender has probably some genetic variants in his genetic material (Tsuang et al., 2001) which probably contribute to his deficit in emotion and in cognition.