Evil, Terrorism & Psychiatry

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Foreword

No one is willingly evil, but one can become evil for a bad disposition in his body and for a training without a true education; this is hideous for everyone and happens against his will (Plato, *Timaeus*, 86e). This citation alone would suffice to show how understanding behavior has fascinated humans since ancient times.

Over the last few decades, the development of behavioral neuroscience has fostered the study of the biological correlates that subtend the mental processes involved in moral choices and social behavior. Novel brain-imaging methodologies, including positron emission tomography (PET), magnetic resonance imaging (MRI) and high-resolution electro-encephalography (EEG-mapping), have allowed scientists to adventure into the marvellous morphological and functional architecture of the human brain in an unprecedented manner. Furthermore, techniques such as transcranial magnetic stimulation (TMS) have made it possible to probe the brain by inducing temporary functional perturbations in selected cortical regions.

At the same time, the decoding of the human genome has paved the way to the study of the role of different genetic alleles in shaping personality, behavior, and vulnerability to mental disorders, as well as to understanding individual variability in response to pharmacological and even to psychotherapeutic interventions.

Neuroscience has proven to be a powerful tool to explore issues across multiple disciplines, ranging from philosophy to ethics, from economics to law, from genetics to psychiatry itself. The dialogue between social and experimental sciences has given renovated vigor to ancient questions. For instance, whether psychopathic criminals should be considered *bad* or *mad* is no longer a matter of abstract speculation, but rather has become the object of scientific investigations in which structural and functional measures in brain regions devoted to emotional processing and behavioral control are combined with evaluation of genetic factors that may affect vulnerability to aversive environmental factors during childhood. This *nature by nurture* interaction in turn may result in increased risk of expressing antisocial and impulsive behavior during adulthood. Recently, novel neuroscience advancements have entered the 2 forensic debate and the law.

In view of evidence coming from neuroscience, the question of the extent to which individuals are free and responsible for their actions has taken on renewed vigor. The issue reconnects to the medieval debate in the ethical and philosophical realm on free will versus determinism, a debate whose echo resonates in the courtroom. The capability to distinguish good from bad and

to decide to act in one way or another is the foundation of the criminal justice system. Indeed, on such a foundation, retributive jurisprudence, typical of all modern societies, bases culpability and imputability.

In this perspective, *Evil, Terrorism & Psychiatry* offers an original and multidisciplinary approach to the understanding of ideological terrorism. What can neuroscience tell us about the *mind*—or rather, the *brain*—of suicide bombers? Which psychopathological factors may play a role? To what extent is religious fanaticism just a matter of molecules in the brain? Can neuroscience, psychiatry, and social sciences by working together develop effective strategies to prevent terrorism sinking deep roots within society?

Readers will find themselves viewing this issue from a new angle, no doubt from a much wider perspective than we have become accustomed to hear in the evening news.

Pietro Pietrini

Psychiatrist and neuroscientist, Director of IMT School for Advanced Studies in Lucca, Italy, and Head of MoMiLab, *Molecular Mind Laboratory*, at IMT School

Preface

Evil and good have accompanied humankind from the beginning, because they are part of human nature. Men's history (and every man's history) is characterized by a constant duel between the two opposing forces and related emotions and behaviors. When evil prevails, it may produce extreme aberrations. Unavoidably, psychiatrists and criminologists have to cope with these aberrations, as very often they are asked to provide explanations for heinous behaviors that have nothing to do with being human, except that they are perpetrated by men and also, although less often, by women (it is a real novelty of the last decades that women may become as ferocious as men). The question becomes particularly pressing in specific situations, such as in times of war (Why did the Holocaust happen? Why has there been torture?), or following genocides, murder rampages or, more recently, the terrorist attacks carried out by suicide bombers that are now perpetrated everywhere, not only in traditionally recognized unstable regions like the Middle East, but also in Western countries, at the heart of what is considered the cradle of modern civilization.

It may be useless to discuss whether evil exists or does not exist, or what its main and different philosophical conceptualizations are,[1–4] when we are casual witnesses of a terrorist attack or look at the carnage following it with a deep sense of helplessness, even while relaxing on our sofa and watching on TV the dreadful images of death and destruction that the media show with no respect to the audience.

There is nothing to say except that evil does exist and we suffer increasingly its misdeeds and consequences. More important, as psychiatrists and neuroscientists, we cannot disregard the evidence that evil is part of being human, as is good, and that both are embedded in our nature, and are probably the result of the interplay between brain mechanisms and genetic and epigenetic, familial, societal, and contextual factors.

Therefore, we cannot close our eyes in front of the brutality of evil's extreme manifestations, but, on the contrary, we should try to disentangle its mysterious roots.[5,6] Obviously, there are many intrinsic obstacles to performing studies in the field of suicide bombers, and the limitations of the available studies have been widely highlighted in the literature, but one of the paramount barriers, according to us, is due to the prejudice, reluctance, and even repulsion of some specialists to investigate evil.

Our book entitled *Evil, Terrorism & Psychiatry* aims at putting together different contributions that might be helpful in understanding the psychological and/or psychopathological processes that may transform apparently

normal individuals into suicide bombers, and, in light of these, at proposing effective prevention strategies.

Our opinion is that if we want to understand evil and its radical forms we have to understand aggression and violence, and the main mechanisms regulating it.[6,7] Aggression can be defined as any behavior directed towards another individual carried out with the purpose of causing harm. It is an innate mechanism that has evolved because it may lead to some benefits or negative consequences, while promoting or impeding survival and reproduction. Violence is aggression perpetrated with the goal of doing extreme harm, including death and destruction, and perhaps may be identified and overlap with evil.

The counterpart of evil/violence is the good that might result from the entirety of the so-called socio-moral emotions encompassing empathy, sense of pity and guilt, indignation for the wrong behaviors, horror from murder, theory of mind, gratitude.[8]

Violence is probably the consequence of our innate aggression that emerges when it is no longer balanced by the moral brain, so that it becomes "radical evil" and transforms "human beings as beings superfluous," as Anna Arendt has described in a very exhaustive fashion.[9]

There are many questions arising from these considerations, and some have been addressed by this book, particularly if there are any specific personality traits, psychological characteristics, or psychopathological conditions that may favor this lack of control of violence coupled with coldness, rationality, cruelty, lack of moral sense, and, in some cases, self-celebration, leading some individuals to deliberately choose to die in order to kill innocents. Unfortunately, the available data suggest a negative answer to this major issue. Similarly, negativity is a possible impact of familial poverty, economic factors, or level of education.[10]

In any case, how can we consider "normal" those subjects, generally young, often well-educated, who become religiously radical and prefer to die while anticipating a possible reward after death? Doesn't it seem like a real cognitive distortion? Who favors this distortion? What tools are used by the charismatic leader to transform people in this way? Indoctrination? Drugs?[11]

It should also be emphasized that all societies and groups have nourished what is innate human morality and have regulated the innate aggression, while establishing a code of conduct and laws to decide what is right and what is wrong, with a primary focus on not harming others while accepting authority and respecting group rules.[12] In the terrorist's mind there is a total reversal even of this normative morality, so that killing others labeled as impure, corrupted, and enemies, according to rigid religious and group norms, is the main ethical value and not murder.

According to us, terrorism and violence in general should also be approached by a thorough understanding of the neurobiological mechanisms

at the basis of human aggression and moral sense, as well as by all contextual factors that may nurture or impoverish the correct balance between the two. Recent data would indicate that early alterations of brain development, following environmental stressors or genetic liability, may impair brain circuits, pathways, and differentiation and constitute a basic "vulnerability" toward a greater risk of developing psychopathology or perhaps deviant behavior.[13] In this case, subsequent life events should act through epigenetic mechanisms modulating the stress response and emotional regulation. Of interest, both serotonin transporter-s allele carriers and sensory processing sensitivity are associated with greater sensitivity to environmental stimuli in humans.[14] Taken together, these data suggest that the prevention of terrorism requires a strong interplay between different specialties, and a careful monitoring of risk factors during childhood and adolescence supported by global changes and reshaping of political choices.

Last, but not least, as mental health professionals and neuroscientists, we should never get used to or remain indifferent to terrorism and violence, as if they were normal phenomena of our societies. On the contrary, they should be acknowledged and stigmatized on every occasion and, more importantly, investigated, starting from their basic roots, while keeping in mind that although nowadays they seem to be less powerful, their resurgence may occur in all situations characterized by personal vulnerability coupled to political/economic instability, loss of traditional values, and an individual's need for recognition. Therefore, given its multifaceted nature, the prevention of terrorism should be based on an integrated coordination of international experts targeting all possible factors involved.

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