

Aggressività psicopatica: una questione di volontà o di determinismo?

Psychopathic Aggression: Will or Determinism

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Parole chiave: psicopatia • aggressività • neuroimaging • responsabilità penale

Riassunto

I comportamenti psicopatici aggressivi possiedono un forte impatto sociale e la loro distruttività può avere conseguenze sconvolgenti. In tutto il corso della storia ed ancora oggi, la psicopatia è sempre stata oggetto di indagini di natura descrittiva, psicodinamica, genetica e biologica. Questo articolo affronta la questione della libertà decisionale degli psicopatici ovvero se questi non possono ritenersi pienamente responsabili dei comportamenti delittuosi tenuti. L'Autore, dopo aver presentato una breve review del concetto di psicopatia, dell'aggressività ad essa correlata e delle relative teorie psicoanalitiche, procede ad una disamina delle teorie filosofiche sulla libera volontà e sul determinismo. Analizza, poi, i recenti risultati delle neuroimaging cerebrali negli psicopatici. Riserva, inoltre, una considerazione speciale alla teoria di Libet sulla libera volontà. Esamina, infine, la responsabilità personale dello psicopatico rispetto ad una condotta delittuosa, alla luce dei concetti di libera volontà e determinismo.

Key words: psychopathy • aggressivity • neuroimaging • criminal responsibility

Abstract

Psychopathic aggressive behavior is extremely antisocial and its destructiveness can be appalling. Throughout the past and still at present, psychopathy has been the topic of descriptive, psychodynamic, genetic and biological investigations. This article addresses the question of whether psychopaths are free in their decisional capacity or whether their criminal acts are subjected to determinism. A brief review of the history of psychopathy, psychopathic aggressivity, and pertinent psychoanalytic views are presented, along with philosophical theories of free will and determinism. Recent findings of brain neuroimaging of psychopaths are discussed. Special regard is given to Libet's theory of free will. The criminal responsibility of psychopaths is considered in view of free will and determinism.

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1. History of Psychopathy

The *Diagnostic and Statistical Manual-IV-TR* (American Psychiatric Association, 2000) includes under the heading Antisocial Personality Disorder some of the basic characteristics of the psychopathic personality. However, the consensus among mental health professionals is that a distinction should be made between the two. The majority of persons with an Antisocial Personality Disorder can be viewed as reactors to social stresses, while the psychopaths are 'real' actors, planning and initiating an antisocial action. The characteristics of the latter, as reported by Hare (1993), seem to retrace Cleckley's (1955) description of psychopaths as self-centered, callous and remorseless persons, profoundly lacking in empathy, and with an inability to form warm relationships with others, persons who function without the restraint of a conscience. The recidivism of criminal psychopaths is well known and their treatability is questionable.

Historically, the concept of psychopathy dates back to the time of Pinel (1801/1962) and Lombroso (1889) – to Pinel with his emphasis on the lack of morals in the psychopath and to Lombroso with his characterization of the psychopath as a *born criminal*. Many scholars have stressed the etiology of psychopathy, presenting it variously as congenital, biological, personal or environmental. Pinel considered psychopaths to be mentally ill, suffering from a *manie sans délire* and in need of moral treatment; Rush (1812) proposed organic causes for psychopathy, which he considered a disease; and Prichard (1835) described it as a disorder of a person's feelings and attitudes, without the involvement of higher mental functions but with a predisposition to behave as a morally insane person without the human capacity for empathy. Koch (1891) coined the term psychopathic inferior and he considered psychopathy to be a hereditary disease, with emotional and moral aberrations and abnormal behaviors. Maudsley (1896) thought psychopaths to be suffering from moral imbecility due to a cerebral dysfunction; von Krafft-Ebing (1922) viewed them as "savages," and believed that they were in need of isolation and treatment for their own sake and that of society; and Kraepelin (1915) described them as manipulators and charming liars, impulsive and remorseless (Arrigo & Shipley, 2001).

Cleckley (1955), in his seminal work, *The Mask of Sanity*, described psychopaths as grandiose, arrogant, callous, superficial and manipulative. He reported their conduct to vary in severity "from a mild or borderline degree up through a great degree of disability" (p. 279) and he believed the disability to be genuine. He also pointed out their recidivistic criminal tendencies and their frequent outward appearance of normality. In the psychopaths we are indeed confronted, as Cleckley wrote, with a *mask of sanity*, and "all the outward features of this mask are intact....The thought

processes retain their normal aspect under psychiatric investigation and in technical tests...[an example of] *la folie lucide*" (p. 423). Their expressions, tone of voice, and general demeanor seem normal, but they fail "altogether when [they are] put into the practice of actual living" (p. 424). The personal and social failures of psychopaths are so pervasive that they can only be explained, as Cleckley wrote, by their being *madmen* or by their being incapable of grasping the meaning of their thoughts or feelings. The concept of their functioning, said Cleckley, "postulates a selective defect... which prevents important components of normal experience from being integrated into the whole human reaction, particularly an elimination or attenuation of those strong affective components that ordinarily arise in major personal and social issues" (p. 428). The distorted affectivity of psychopaths, their tragic persistence in antisocial behavior and their inability to learn from mistakes is akin to a profound childish immaturity, which causes them to move, without reflection, from thought to action, without appraising and discerning what type of decision they should make and act upon.

The emotions of psychopaths can be described as pseudo-emotions. They use a pantomime of feelings. They are full of rationalizations, their judgment is poor, and their sense of value is almost nonexistent. Their outward behavior seems to be the result of a deeply distorted inner personality, similar to that of the schizophrenic, at times largely concealed by apparently good reasoning and their ability to live their lives in a quasi-sane manner (Palermo, 2004).

Macdonald (1961) described psychopaths as lacking empathy, impulsive and intolerant of frustration. They are usually of average or above average intelligence, have an apparent lack of guilt and do not learn from experience. Alexander and Ross (1952) believed that at the basis of psychopaths' symptomatic self-destructive behavior is the presence of unconscious neurotic conflicts, even of an incestuous or patricidal nature. The psychopath may project his unacceptable aggressive feelings outwardly and for him the world suddenly becomes a hostile place in which to live and at times he acts out against it. Halleck (1967) posited that the psychopath violates the law "in his efforts to suit the world to his own needs" (p. 109). The crimes could be a way to control a fear of psychological disintegration.

Arieti (1967) attributed the impulsiveness of psychopaths and their desire for immediate gratification to an attempt to overcome unbearable inner tension due to short-circuited anxiety. They are "unable to change, repress, postpone or neutralize [their] need for hostility," he stated (p. 248), and their criminal acting out may be in the form of murder, rape, seduction in men, or promiscuity and prostitution in women. More important and relevant to this discussion, however, is Arieti's reflection on the paranoid psychopath. Psychopathic traits or behavior "generally pre-

ceded a definite paranoiac symptomatology, or, in some cases, periods of acting out with no freely expressed delusions alternating with obvious delusional periods" (p. 248).

Psychopaths have a reduced sensitivity or no response to displays of distress in others, are distractible, and have a desire for immediate gratification, without a balance between immediate and long-term gratification and have linguistic deficits (Schneider and Nussbaum, 2007). Already in 1993, Robert Hare reported that linguistically the psychopath's speech is syntactically and semantically disordered, with disconnected components which are, nevertheless, masked by a superficially-grammatical orderly structure.

In summary, psychopaths are self-indulgent and interpersonally intrusive (Yochelson & Samenow, 1976). When acting out criminally, they are remorseless and callous. Their transgressions of societal rules bring harm to others and show their inability to process moral issues in a mature way. They are "oblivious and insensitive to affective moral valences and therefore the prospect of being governed by those aspects of life is not even a possibility" (Schneider and Nussbaum (2007, p. 180). They seem to be fixed at a pre-conventional level of moral development (Kohlberg, 1984; Piaget, (1932/1965). Psychological and neurological studies support the clinical findings that psychopaths show diminished emotional responsiveness to the suffering of the people they victimize. They seem to be unable to understand their victim's fear as reflected in their facial expression (theory of mind), and that worsens their aggressive violence (Blair, 2001). They show a diminished appreciation of moral codes. They are extremely impulsive and act without reflecting on the consequences of their behavior. This raises the question of whether they are morally or legally responsible for their actions.

At times psychopaths show feature of a Borderline Personality Disorder. In those cases their symptomatology is even more complex. They may go through sudden mood changes, such as anger, depression, anhedonia, sense of futility, loneliness and isolation. They resort to primitive defense mechanisms, such as ambivalence, projective identification, feelings of omnipotence, denial, idealization and devaluation. Their behavior is more marginal, transient and ego-dystonic, and their interpersonal relationships appear to be good only on the surface. At times they may suffer from transitory and fleeting hallucinations or delusions. They even seem unable to control their impulses because of sudden psychotic thinking due to internal and external stress. In such cases they fall into Otto Kernberg's (1992) classification of psychotic personality organization.

2. Psychopathic Aggression

Research has found a strong relationship between psychopathy and aggressive behavior in offenders throughout their criminal careers. Hare and Jutai (1983) supported the propensity for violent aggression by psychopathic offenders who, they found, committed crimes twice as often as non-psychopaths. Similar percentages were found by Porter, Birt, and Boer in another later study (2001).

In general, aggression driven by anger and hostility can

be viewed as a progressive manifestation of the displeasure felt in and about life and people by a person with a shaky emotional equilibrium. It can be distinguished as primary aggression and reactive aggression. Blackburn (1998) described aggressive psychopathic behavior as primary – that of the classical psychopath, hostile and destructive in character, with many constitutional deficits, or secondary – as reactive to psychosocial factors, generally frustrating life experiences. Aggression also can be subdivided into premeditated aggression, impulsive aggression and aggression caused by medical illnesses (Glenn & Raine, 2009). The aggression of psychopaths has in itself a varied degree of impulsivity.

Impulsivity may be viewed as a complex act by a person "without the ability to consider the consequences to [himself] or others....a failure of a normal process by which, over about one-third of a second, a potential behavior is screened before it enters conscious awareness" (Swann, 2003, p. 26). Even though psychopaths seem to function normally, their quick decision making, lacking reflection before acting, makes their decisional capacity defective. To this effect Wilson and Herrnstein (1985) stated: "Impulsiveness can be thought of as either the cause or the effect of the poor conditionability of the psychopath" (p. 204). They show a lack of self criticism and "[w]ithout the internal monologue, time horizons shrink; behavior becomes more tied to its immediate consequences" (p. 205). Strong unsublimated impulses are disruptive, and self-control is essential for a person in order to avoid giving vent to unbridled impulsivity.

From a philosophical point of view, impulses were viewed by Friedrich Nietzsche (1998) as important in a person's behavior. He wrote that "a man without impulses could not do the good or create the beautiful any more than a castrated man could beget children" (in Kaufmann, 1974, p. 224). Nevertheless, impulses need control, and he viewed the man who is able to master his passions as powerful – a superman (*übermann*) – able to organize his self and, in so doing, give style to his character. As Kaufmann wrote (1974), Nietzsche believed that the man who imposes restraints on himself is not only "a 'rational' animal, but also a 'moral' animal" (1974, p. 213). The two may coexist. On the other hand, he viewed the man who strives for power over others through bullying and criminal activity as a weak person, deeply frustrated. Nietzsche believed firmly that true existence is not a passive accident but is a personal, progressive achievement toward bettering oneself, attempting to achieve those higher models of behavior one should aim for in order to become one's true self: "... You shall become who you are" [*Du sollst der werden, der du bist*] (Kaufmann, 1974, p. 159). He well portrayed the criminal's restless, morally unhealthy personality when he wrote, "What is this man? He's a heap of diseases, which through his spirit, reach out into the world: there they want to catch their prey...a ball of wild snakes, which rarely enjoy rest from each other: so they go forth singly and seek prey in the world" (Nietzsche, 1978, p. 39). His stark description is typical of the criminal psychopath.

Baruk, the French psychiatrist, viewed the total lack of moral values, present in the psychopathic offenders, as "one of the worst calamities that can affect a human being, because of its personal and social consequences" (cited in Di

Tullio, 1971, p. 41), one of the most serious of which is their aggressive acting out behavior. Aggressivity, in its destructive form is frequently connected with explosive impulsivity. During such explosive reactions, some individuals, unable to contain their feelings, behave in a socially unacceptable way and, careless of the boundaries of good interpersonal civilized conduct, do not weigh their thoughts or their feelings before acting out. These antisocial behaviors are at times observed in persons suffering from Antisocial Personality, Passive-Aggressive, Paranoid or Borderline Personality Disorders, but they are more frequently seen in psychopaths. Their behaviors are immature, reminiscent of children who are unable to exercise their reflective capacity and control over their impulses. As Daniel Goleman (1995) wrote, "There is perhaps no psychological skill more fundamental than resisting impulse. It is the root of all emotional self-control, since all emotions, by their very nature, lead to one or another impulse to act" (p. 81). Sudden acting out may signify a call for attention or acknowledgment, or may be simple surrender to evil-doing.

The impulsive act of psychopathic aggression is frequently out of proportion to the contextual situation. It has been proposed that at the basis of impulsive hostility and aggressivity may be frustrated feelings of dependency, a craving for love, a way to recapture a primitive maternal relationship, a sense of helplessness, and a wish to control the other (Winnicott, 1953). The negative feelings of psychopaths are usually long-standing and deeply buried within the unconscious or the subconscious. Their hostile and aggressive feelings are ego-dystonic and they try to control them in order to avoid real or fantasized narcissistic injuries. In trying to maintain their psychological homeostasis they exercise repression but often are unable to do so. At times, confused irrational behavior or an upsurge of feelings of frustration precedes destructive acting-out.

Psychopaths are "less likely to be affected by punishment [which frequently produces moral socialization] and thus are more likely to continue to engage in the punished action in the future" (Daversa, 2010, p. 9). Psychopathy itself predicts aggressive behavior. Lacking remorse and empathy, and because of a tendency to uninhibited behavior, they qualify as intraspecies predators, using aggressivity to obtain sexual pleasure and employing power and control in crimes that may include murder and sadistic behaviors. In their homicidal fury or sexual orgies they are ruthless.

Although, psychopathic aggression may be reactive, it is more likely to be instrumental, premeditated and well organized. The behavior is occasionally interspersed with lack of control. Cleckley (1955) asserted that psychopathic violence is more instrumental and is motivated by material gain, unrestrained sexual drives, and destructive hostility, thrill-seeking motivation, and a lack of emotional arousal. Psychopaths are found in every social stratum, from the lowest to the highest, and include professionals, political leaders, and financiers. They often have a behavioral façade of normalcy, which deceives others. They tend to downplay their actions and exculpate themselves, minimizing their planned violence in favor of reactive behavior. Prostitution, drug addiction and drug-trafficking are frequently observed in these persons, who have a strong tendency to exploit others.

3. Psychoanalytic Theories of Aggression

Various scholars have contributed to the understanding of the development of human aggression. Freud, in *Civilization and Its Discontents* (1961), wrote, "Men are not gentle creatures who want to be loved, and who at the most can defend themselves if they are attacked; they are, on the contrary, creatures among whose instinctual endowment is to be reckoned a powerful share of aggressiveness" (p. 68). He hypothesized that at the basis of some criminal actions there may be a conflict at the level of the Oedipal relationship. The crime could be the means to call upon oneself punishment for the Oedipic guilt. Alexander (1948) described psychopaths as a group of offenders who, because of intense guilt feelings over removed early life experiences, engage in antisocial, aggressive behavior in order to be apprehended and punished.

Several theories on the psychological development of the infant shed light on the development and understanding of aggressive behavior. Schilder (1942) proposed that as the child grows in the definition of his body image he becomes more active and tries to master the world around himself. That requires a certain amount of aggressivity, which at times is mixed with sexuality. Eventually, however, helped by the positive controlling influence of the family and social mores, the child masters this aggressivity. Kohut (1971) theorized that a child achieves individuation and self-esteem when he is able to tame the archaic, grandiose and exhibitionistic self. Kohut believed that this is a necessary step in order to achieve an ego-syntonic, purposeful adult personality development. However, he also thought that at times, due to a narcissistic trauma suffered in early infancy, the child may not progress towards maturation and may still retain within himself the presence of a disappointing parental imago. At the core of his psychological self, even during his adult life, there would then be the presence of what Kohut refers to as an archaic transitional self-object, usually required for the maintenance of a narcissistic homeostasis. When venting his aggression against others the psychopath attempts to keep under control the disappointing parental imago, which threatens his narcissistic homeostasis.

One of the most influential object relations theorists, Kernberg (1992) posited the idea that the infant is prewired to form destructive schemes of himself and others. Cognitive and affective potentials facilitate, he said, the relationship of the infant with his mother. Object relations are initiated by "a central biological function of inborn affective patterns with their behavioral, communicative, and psychophysiological manifestations" (p. 15). Kernberg postulated that the infant's affective memories of earlier experiences (good and bad mother perceptions) are stored in the limbic system and that they may be reactivated later in specific relationships.

It is assumed that the infant has many gratifying and concrete experiences with his mother and the environment that will form a complex world of affective object relations which are internalized as good-object relations. According to Kernberg (1992), "Love and hate thus become stable intrapsychic structures...for organizing psychic experience and behavioral control...through various developmental stages" (p. 20). That gives birth to libido and aggression, which will later become driving affects. In the normal for-

mation of character, defenses “push the dynamic unconscious deeper and deeper into the psychic apparatus” (p. 19) contributing to the concomitant formation of ego and id. This dynamic unconscious and its pathological primitive complexes at times erupt into consciousness, especially in persons with severe personality disorders, such as psychopathic and borderline individuals, as well as in those with psychoses.

On the basis of object relations theories, it could be claimed that the violent psychopaths, especially those that kill, are unable to tame their archaic, grandiose, exhibitionistic self, as Kohut (1971) and Mahler (1972) asserted. Or, as Klein (1935) stated, their repressed bad imagoes are projected onto the outside world and their desire to destroy them ensues; or even that, as in a narcissistic crisis, the repressed pathological complexes come to the fore and in aggressive acting out they destroy the frustrating object. It could be postulated that in those moments, at the time of the killings, these killers are victims of their pathological, irrational unconscious.

4. Will or Determinism: A Metaphysical Debate

The metaphysical debate regarding will and determinism spans almost three millennia of the history of Western civilization. This debate is important in the discussion of psychopathic aggressivity. It follows the evolution of human thinking from a concrete understanding of the world and the self to the present-day highly sophisticated scientific climate. It goes from a deterministic view of the physical world and a self under partial control by anthropomorphic gods to the self as a free individual, master of his own destiny.

In the beginning, humans had no concept of the self as an agent to will, and the gods were thought to frequently intrude into their lives, guiding their conduct. Bible narratives, estimated to have been written around 3,500 years ago, seem to testify to the Jewish belief that the god of the Jews, Yaweh, created humans with a free will when, in Genesis, it is recounted that if Adam and Eve disobeyed God's commands they would be punished. It seems reasonable to interpret those words as meaning that they had a choice to exercise their own will. In Deuteronomy the same recommendation is given to Cain and the people of Israel. This indicates that already at the time of the Biblical recounting people believed that they possessed freedom of action and accountability.

In Homer's *Iliad* (c. 800 BCE) the many heroes often justified their deeds, both good and bad, by claiming that the gods had intervened to influence their actions. Agamemnon, King of Mycenae, for example, justified his abduction of Briseis, Achilles beloved, by attributing his lustful action to the gods who blinded his judgment. Both the *Iliad* and the *Odyssey* (c. 750 BCE) portray numerous episodes in which human behavior is portrayed as due to the interference of the gods. Thus, there was only an appearance of freedom, since the actions were quasi predetermined.

As early Greek philosophers began to speculate about the origins and meanings of life, Protagoras (c. 481–420 BCE) came to believe that man is the measure of all things. During the same period, philosophers of the atomistic

school (Leucippus [c. 480–420 BCE] and Democritus [c. 470–370 BCE]), theorized that humans, as well as the cosmos, are made of indivisible particles, which they called atoms. They believed that in humans the atoms were in continuous movement and when they collided with one another they generated their free will. This theory, even though deterministic when concerning cosmic events (a concatenation of immutable repetitive events), was at the basis of the Epicurean theory of Lucretius (94–55 BCE) who believed that humans possess free will. Socrates, Plato and Aristotle (4th century BCE) all believed in free will, the first two also accepting moral determinism, since they thought that people did not act against what they believed to be good. In his *Nicomachean Ethics*, Aristotle wrote that “man is the origin of his actions,” (III, iii. 15, p. 139) capable of a voluntary act following a deliberate choice. But he added that “acts done from passion seem very far from being done of deliberate choice” (III, ii, 6., p. 131). The Stoics (early 3rd century BCE), on the other hand, including the later Roman orator Cicero (106 BCE–43BCE) and the Roman Emperor Marcus Aurelius (121 CE–180 CE), believed not in free will but in strict determinism and they claimed that this belief was supported by logic.

Greek tragedians (e.g., Euripides, Aeschylus and Sophocles) believed in free will and attempted to enlighten people through their works to a non-deterministic view of human behavior. They stressed human decisional capacity and personal responsibility for actions. Euripides' Medea admits that with her own hands she killed her children in an act of revenge against her unfaithful husband, disclaiming any interference from the gods in her decision. Aeschylus, in his tragedy *Seven against Thebes*, strongly advised that people stop blaming the gods for their deeds and accept their responsibility, especially for their loss of moral control. The struggle between god-driven fate and personal decision making continued in the tragedies of Sophocles. In *Oedipus Rex*, Oedipus admits that his actions were his own decision and accepts the responsibility for them, stating that the hand that struck his victims was his own.

During early Christianity, two religious scholars were prominent in the debate on free will and determinism. Pelagius (4th cent. CE) rejected the thesis of original sin and argued that humans had the power to choose and to decide, and their choices would determine whether they would go to Heaven or to Hell. During the same period, Augustine, Bishop of Hippo, argued that humans carry the original sin of Adam and Eve, the early transgressors of God's commands, but that through an act of grace God grants freedom of choice to those people who are good Christians. He maintained that God in his omniscience, even though knowing what decisions would be made, does not interfere with them. Later, St. Thomas Aquinas (1225–1274) made a distinction between a natural *unfree* will (the acceptance of naturally and necessarily desirable truths such as justice, and peace) and a deliberate or free will, which helps one to evaluate choices before deciding.

During the Renaissance and beyond, philosophers continued to question whether man's actions are free or determined. Descartes (1596–1650), for example, who is famous for his dictum *Cogito ergo sum*, firmly believed in human free will. He thought it essential for the making of moral choices

and important in assessing responsibility for a person's actions. He thought of free will as the ability of humans to do or not to do something without constraint, after having had the opportunity and capacity to reflect on alternative choices and consequences. In *The Passions of the Soul* he wrote, "But the will is by its nature so free that it can never be constrained" (Descartes, 1999, p. 343). More pertinent to the present discussion, he also wrote: "[By] understanding one is enabled to entertain certain propositions, but understanding by itself neither affirms, denies, neither chooses nor rejects. The role is reserved for the will" (Taylor, 1972, p. 365).

Among the humanistic scholars, Voltaire (1694-1778) and Rousseau (1712-1778), upheld free will and the idea that people make choices for which they assume responsibility. Free will was seen as the expression of human autonomy and dignity of the willer. Kant (1724-1804) also asserted in *The Critique of Practical Reason* (2008) that humans have free will, and he believed that their actions are intentional and self determined. Schopenhauer (1788-1860) (2003) asserted that the will is the dominant force in a person's life. Later, James (1842-1910), arguing that humans exercise free will, rejected scientific determinism (Boas, 1972). And in the twentieth century, Sartre (1956), strongly supporting free will, contended that to deny one's own free will is to make excuses for one's behavior.

Contrary to free will, determinism is based on the belief that any decision or action is predetermined: it is viewed as the resultant of a concatenation of events, each caused by the preceding one and causing the subsequent one. Among the most famous determinists one finds the formerly-mentioned Stoics, who believed that every event has a cause and the cause is rational. By the time of the late Renaissance, Luther (1483-1546) and Calvin (1509-1564) firmly believed that man's actions are predetermined. Spinoza (1632-1677) asserted his belief that feelings of free will are due to being conscious of one's actions, but he was basically unaware of the concatenation of causes that determine those actions. The French philosopher d'Holbach (1723-1789) stated that every thought or action is determined by prior ones and, more specifically, that man's desires are outwardly and inwardly motivated.

Scholars of the compatibilistic school of philosophy generally accepted natural causation of events but admitted the possibility of free choice. Among the most important scholars of compatibilism are Hobbes (1588-1679) and Hume (1711-1776). Although upholding determinism, Hobbes did not reject free will, believing that a voluntary act is caused by an act of the will and is no less voluntary because the act of will is caused. Hume believed that people are free and responsible for exercising their free will. However, he also held a deterministic view of human actions, because the same motives produced the same actions. Others, such as Darwin (1809-1882), not believing in free will, asserted that no one deserves credit for anything.

The long debate on free will and determinism continued into the twentieth century and even quantum theory has been used in support of free will. In that regard, Cashmore (2010) wrote that Eccles (1989) had suggested "in the interaction between mind and soul...[Man] achieves the capacity to 'swerve atoms' – a requirement for free will (as noted by Epicurus) by taking the 'magic of the soul' afforded by the dualism of Descartes and combining it with

Heisenberg's uncertainty principle" (p. 2)¹. Frankfurt (1969; 1988) made a distinction between acting freely and having free will, believing that although people can and do act freely, they still do not have free will. Free will, he said, is present only when an individual who knows that what he wishes to do is wrong decides not to do it. It is then that free will is exercised. A man is only free when he is able to choose or to take the initiative to deliberate responsibly. Other twenty-first century philosophers do not believe in free will. Pereboom (2001) believes that people should not be held responsible for their actions, Smilansky (2000), in a utilitarian fashion, stated that even though there is no free will people should not stop believing in it, because it would destroy cardinal tenets of law, such as findings of guilt or innocence and therefore annul punishment for wrong doing. And Wilson (1998), even though admitting that there is no certainty of its existence, wrote "[W]ithout it the mind, imprisoned by fatalism, would slow and deteriorate" (p. 120).

5. Biological and Neuroimaging Findings in Psychopathy

The prevalence rate of brain dysfunction in the general population is three percent but "neuropsychological studies show that the prevalence rate of brain dysfunction among the criminal population is extremely high, with prevalence rates of ninety-four percent among homicide offenders, sixty-one percent among habitually aggressive adults, forty-nine to seventy-eight percent among sex offenders, and seventy-six percent among juvenile offenders" (Redding, 2006, p. 57), many of whom are psychopathic offenders. From a biological point of view psychopathic aggressive behavior is influenced by the interplay of multiple genes. These genes, together with hormones and neurotransmitters, act upon various biochemical circuits. Genetics, biological, and environmental correlates of aggressive behavior have been pointed out by twin studies, adoption studies, electroencephalographic studies, low arousal theory, heart rate studies, skin conductivity tests, and gene mutations, such as MAOA activity, testosterone and cortisol levels (Palermo, 2010). Antisocial psychopathic aggression should therefore be viewed as the resultant of a biological predisposition and environmental factors and their effect on the brain. Neuroimaging techniques give supporting objective evidence of structural abnormalities and dysfunction of brain regions that may contribute to mental impairment, abnormal behavior and even criminal acting out. These fast-evolving techniques, CAT, MRI, fMRI, sMRI, PET, SPECT², are continuously improving our understanding of the neurobiology of normal and abnormal behavior.

- 1 Werner Heisenberg's principle states that it is impossible to determine simultaneously both the position and velocity of an electron or any other article with any great degree of accuracy or certainty.
- 2 Computerized Axial Tomography, Magnetic Resonance Imaging, functional Magnetic Resonance Imaging, structural Magnetic Resonance Imaging, Positron Emission Tomography, Single Photon Emission Computed Tomography

The areas of the brain principally identified as dysfunctional in the psychopath include the prefrontal cortex, temporal cortex, the amygdala, the hippocampus complex, the corpus callosum, and the angular gyrus. In addition, the neurotransmitters dopamine and serotonin are involved in the uninhibited (impulsive) behavior of the psychopath. The frontal inhibitory system is under the effect of serotonin. If serotonin is deficient, dopamine takes over and increases the tendency to immediate reward, with a lack of encoding or moral appreciation (Palermo, 2010).

Within the brain, there is an interplay between the pre-frontal cortex and the amygdala. The prefrontal cortex exercises control of the amygdala, inhibiting aggressive behavior. Aggressive behavior is often due to a hypofunction of the frontal lobe leading to hyperfunction of the amygdala. The amygdala is an almond-shaped region of the forebrain. It sends and receives projections from the frontal cortex. It is involved in a variety of behaviors, such as the reaction to facial expression, enhancing memory in emotional situations, and in aggression. Hariri et al. (2002, 2005), using functional imaging techniques, "showed that humans with a short copy of the 5-HTT [5-hydroxytryptamine] allele exhibited greater amygdala neuronal activity (i.e., in the part of the brain concerned with emotional reactivity) to fearful visual stimuli compared with individuals with two copies of the long allele" (in Rutter, 2005, p. 199).

The activity of the amygdala is modulated by three specific regions of the frontal lobe: the dorso-lateral, the medial and the orbito-frontal cortex. It plays a major role in abnormalities of behavior, especially when it is not controlled by the frontal lobe. In the amygdala there are many receptors for testosterone. A dysfunction of the amygdala and the closely-related hippocampus are associated with violent aggressive behavior. Fright activates the amygdala and stimulates the hypothalamus, which in turn stimulates the HPA axis [hypothalamic pituitary axis] to produce cortisol, which contributes to aggressive acting out. The amygdala is mostly involved in aggression, especially instrumental aggression. Functional neuroimaging has clearly pointed out that irrational aggressive behavior is often the outcome of a *top-down dysfunction of the brain* in which, for example, the frontal cortex loses its control on lower structures, such as the amygdala.

The insula, or Island of Reil, is found at the posterior junction of the parietal, temporal and occipital lobes. It contributes to the processing of emotional information and is involved in the experiencing of lust, disgust, pride, humiliation, guilt, atonement and empathy, all of which are at times involved in aggressive behavior.

Lesions of the frontal lobes may lead to an incapacity to distinguish right from wrong or to appreciate the moral implications of one's behavior and diminish its executive capacity, that is, to make choices and decide accordingly. Lesions of the limbic system or mid-temporal regions may predispose one, because of poor impulse control, to random outbursts of rage and violence. Cognitive impairment and emotional disinhibition are often present in violent criminal psychopaths.

The behavior of the person with an aggressive antisocial personality is reminiscent of the orbito-frontal syndrome: impulsive, irresponsible, lacking social inhibitions, impairment of insight and foresight. In fact, it has been suggested that a

history of head injuries, from mild to severe, is more often reported by violent criminals than by non-violent criminals (see e.g., Volavka, 1995). Direct damage to the frontal lobes, however, is not necessary to produce significant frontal lobe dysfunction. Damage to the upper brain stem may produce similar effects (Goldberg, 2001). Raine, Meloy, Bahrle, Stoddard, LaCasse & Buchsbaum (1998), in a study of the brains of convicted murderers, found PET scan abnormalities in the prefrontal cortex, with an eleven percent reduction in the gray matter. Patients with lesions of the temporal lobe/limbic system may show violent repetitive behavior, with impulsivity, intense emotional arousal, and lack of control with remorse and depressive feelings after their actions.

The impulsive aggression of psychopaths and of persons diagnosed with Borderline Personality Disorder (which at times coexists with psychopathy) is most probably the consequence of a disruption of the emotional modulation circuits. These circuits include the anterior cingulate cortex (ACC), the orbital frontal cortex (OFC), the ventromedial prefrontal cortex (VMPFC), and the dorsolateral prefrontal cortex (DLPFC) (e.g., Goodman, Triebwasser, Shah & New, 2007). Structural Magnetic Resonance Imaging (sMRI) findings in Antisocial Personality Disorder (ASPD) and in psychopaths show thinning of the prefrontal grey matter and a decreased in volume of the amygdala, especially when the level of psychopathy is high (Raine, Lencz, Bahrle, LaCasse, & Colletti, 2000). One study found that fMRI showed decreased activity in various parts of the brain in psychopaths, including "the amygdala, hippocampal formation, parahippocampal gyrus, ventral striatum and anterior and posterior cingulated gyrus" (Goodman et al., 2007, p. 103).

In addition to biological and genetic explanations for psychopathic behaviors, it has been theorized that environmental and psychosocial factors may also be at the basis of their development. Indeed, the continuous stress of maltreatment by caregivers, non-responsive parental attitudes, rejection and abuse (psychological, physical or sexual) may cause an affective disregulation. This disregulation is mediated by a hormonal cascade, enhanced by monoamine oxidase A genotype involving the brain, especially the functions of the amygdala and hypothalamus (Caspi et al., 2002). The affective neural network disregulation in the growing child over time will produce typical psychopathic behaviors, such as a lack of affective responsivity or distant or arrogant and antisocial interpersonal relationships (Davera, 2010).

6. The Libet Experiment

In 1965 researchers in Germany, using human EEG tracings, reported that just before (0.4-4 seconds) consciously initiating a voluntary movement of the hand or foot the electrical pattern of brain activity of the participants in their study shifted (Kornhuber, & Deecke, 1965). They termed the shift readiness potential (*Bereitschaftspotential*), believing that it was related to the process of preparing the body to make the movement. Libet, Gleason, Wright and Pearl (1983) replicated the experiment, employing neuroimaging to pinpoint the exact moment when the subject became consciously aware of his intention to act. They were able to

demonstrate that the *readiness potential* began 550 milliseconds before the muscles were activated to perform the act. However, the readiness potential was not always followed by movement. They noted that “[t]he brain was evidently beginning the volitional process of the act well before the activation of the muscle that produced movement” (p. 49). In addition, they wrote, the muscle activation took place after too long a time to assume that it was due to a motor command to the muscle. The study confirmed that individuals became aware of their desire to move the hand 350 milliseconds before the readiness potential unconsciously took place but 200 milliseconds before the motor act itself.

The above experiments support the idea that the unconscious readiness potential takes place before individuals are aware of having the will to act. That would be contrary to the assumption that their free will initiated the action, because the action apparently started in the brain 350 milliseconds before the act, and 200 milliseconds before the subjects' awareness. Libet et al. (1983) theorized that although the will does not initiate the action it may exercise a veto of the entire process if the subjects do not wish to continue a specific action. As Schwartz and Begley (2003) wrote, Libet had noted that the veto of an urge to act is a common experience. Therefore, even though the urge to move the hand is unconsciously initiated, the will is still in control and carries on the act in the way the individual decided. In other words, they note, refraining from acting is as much of an act as committing one, as Sherrington (1933) had written decades earlier.

Libet et al.'s (1983) findings support the idea that free will does not initiate a voluntary act but allows it or suppresses it because of the specific desire of the subject or because of its socially unacceptable consequences. He clearly stated that the volitional process is initiated unconsciously, but added that free will is not excluded because it can veto the act. That is, the final decision to carry out an act is consciously controlled and the unconscious initiative for an action may either proceed or may be aborted by the veto of the free will which, in that case, acts as a gatekeeper or censor; that is, the veto capacity is not the result of a preceding unconscious process. However, what is necessary for gatekeeping is attention (will) – a mental force that actively engages the wisdom of the executive discrimination of the prefrontal cortex. Schwartz and Begley (2003) commented that the will acting as a gatekeeper has long been present in religious and ethical dicta as *Do not do that*, or *Control thyself*.

Libet later wrote (1999), “Given the speculative nature of both determinism and non-determinist theories, why not adapt the view that we do have a free will (until some real contradictory evidence may appear, if it ever does). Such a view would at least allow us to proceed in a way that accepts and accommodates our own deep feelings that we do have free will” (p. 56). In this way man would not view himself as an automaton.

It has been asserted that advances in neuroscience will not undermine our intuitive notions of free will and moral responsibility. Thus far, wrote Roskies (2006) they have not established whether we live in a determinate world but have brought into the debate random or probabilistic processes. Further, she wrote that “[d]eterminism is an assumption that many scientists adhere to, but it is likely always to remain an assumption” (p. 421). Assumptions are, obviously, not

facts. The same cannot be said of biological mechanisms and their effects on humans as responsible agents. Studies have shown that volitional activity activates the prefrontal cortex, just as automatic clenching of the hands activates the motor cortex. It can be safely said that the dorsolateral prefrontal region has as a primary role in the free selection of behavior, “choosing from a number of possible actions by inhibiting all but one and focusing the attention on the chosen one” (Schwartz & Begley, 2003, p. 312.). If lesions are present in those areas of the brain, they make the subject similar to an automaton, diminishing spontaneous activity and selective attention. It is to be hoped that more extensive knowledge of neuroscience will facilitate the shaping of views on responsibility, reconciling intuitive and legal notions within the framework of a compatibilistic view of brain and mind working together. As Kawohl and Habermayer (2007), reacting to Libet's paper, suggested, in dealing with offenders, psychoforensic experts should use a psychopathological approach based on cognition, motivation, personality and personality values rather than the data from Libet's experiments.

7. Free Will, Decisional Capacity and Criminal Responsibility

The concept of free will in criminal responsibility and *mens rea*, introduced into the legal system in England around the eleventh century, was emphasized in the following centuries by various scholars, including de Bracton (13th century), Hale (17th century) and Blackstone (18th century). For any decision to be free an adult individual must be aware of his surroundings (the reality around him), of his own and other's behavior, and of the consequences of his actions or non-actions. Further, he must have the cognitive capacity to be able to make choices in conformity to the laws, ethics, and moral and social standards of the society in which he lives, and to recognize the social value of the acts he is performing.

Cognitive capacity is understood as the capacity to assess one's own actions. This capacity may be impaired because of damage to particular brain areas, usually involving the frontal and prefrontal regions of the brain, the seats of cognitive processing that can signal and trigger prepackaged emotional reactions. Cognition facilitates the presence of emotions by “giving us the ability to make decisions about what kind of action should occur next, given the situation in which we find ourselves now....[and] it allows this shift from reaction to action” (Le Doux, 1996, p. 175). Integrating cognitive capacity, decisional – or volitional – capacity, is the ability to reach a free and voluntary intent to act out what one chooses. It includes a deliberating process that requires prior reflection and the choice of a given course of action, which may or may not be executed. In forensics free decisional capacity determines responsibility.

There are mental disorders in which the decisional capacity is clearly involved. These include the obsessive-compulsive neurosis, in which the compulsion to act does not allow reflection before acting or obsessive thinking does not allow deliberation; the disinhibited behaviors of the psychopath who acts out in an impulsive manner, without

prior reflection; or the disinhibited, unreflected decision making of persons under the effects of alcohol or drugs. At times, inner suspiciousness in persons with severe personality disorders may cause a misinterpretation of facts that contributes to impairment in decision making. People with schizoid and schizotypal personalities who are severely withdrawn may also show decisional impairment, not being totally aware of the many facets of a social situation. This becomes more evident when they are under stress. Cognitive and decision-making capacities (understanding and will) normally integrate each other. However, they are frequently impaired in people who are psychotic, disrupting their capacity for clear reasoning and choice.

In one of the most well-known criminal cases of the twentieth century the defense attorney pointed out the presence of many factors, known and unknown, that may undermine an individual's cognition and decisional capacities. His voice echoed in the courtroom as he asked why the defendants had attacked their victim. The answer, he said, "was self-explanatory, not for money, not out of spite, not for hate. They killed him as they might kill a spider, a fly, for the experience. They killed him because they were made that way. Because somewhere in the infinite processes that go to the making up of the boy or the man, something slipped" (Famous American Trials, 2010). Those were the words of Clarence Darrow and his main argument in his defense of Nathan Leopold and Richard Loeb, both teenagers, who killed 14-year-old Bobby Franks. In his final closing statement Darrow claimed that the two defendants were not fully responsible for their act. Their behavior, he asserted, might have been the consequence of peculiar and immature thinking, possibly due to psychological, biological or genetic factors. His defense was upholding determinism in a court of law and it was his belief that the future would support his assertion. He shifted the debate of will and determinism from the metaphysical arena to the scientific/forensic one. Darrow was anticipating what 80 years later is taking place: the contributions of neuropsychological assessments and neuroimaging technology to forensics and to findings of legal accountability.

Legal accountability theory attempts to determine whether the individual/agent has *mens rea* – the capacity to form intent and the mental capability of controlling his own actions: the actor should have the capacity to act differently on the basis of a selection of choices. Accountability theory views the miscreant as responsible for his actions unless his mental state at the time of a crime made him unable to appreciate the wrongfulness, the quality, or the consequences of his actions, and to behave according to the dictates of the law (American Law Institute Model Penal Code) – in other words, to be in control of his volitional capacity. The presumption of free will underlies all tests for criminal responsibility: are criminal actions the result of the exercise of free will or the consequence of deterministic factors? Wilson and Herrnstein (1985) wrote, "The recurrent theme for the concept of responsibility...is behavior freely and intentionally engaged in" (p. 504).

Determinism, as described previously, means that behavior is due to a concatenation of causes, and as Juth and Lorentzon wrote, "Everything that happens is taken to be sufficiently determined by prior states, hence there could never have been any real attenuations to what actually hap-

pened" (2010, p. 2). On the basis of pure (hard) determinism, psychopaths would not be responsible for aggressive behavior because they did not exercise free will. However, present-day forensic legislation reflects the largely accepted assumption that "people have a relatively unhindered capacity to make choices and to decide what they will do" (Felthous, 2008, p. 1). Indeed, in addition to cognition, the 1962 American Law Institute Model Penal Code for the insanity defense stressed volitional capacity.

Juth and Lorentzon (2010), avoiding involvement in a metaphysical dispute on free will and determinism, suggest substituting free will with gradual autonomy, making accountability a matter of degree. They explain that the interplay of will, decision and action, which are part of the autonomous self, would stress "responsibility and accountability in terms of control and control in terms of a conception of autonomy" (p. 5). Their concept of autonomy is mindful of Bandura's (2006) view of people as a human agency with the unique capacity to mold their life circumstances and the course that their life takes. This idea also is stressed by Felthous (2008) who stated that people are agents with a locus of control and that in spite of "the concatenation of natural causes for decision and action...must be treated as individuals..." (p. 9). People possess a will, he added, that allows them to exercise necessary control of decisions and actions in their social life, which enables society to function.

Legal scholar Morse (2007) argued that free will is not a necessary part of the assessment of criminal responsibility, because the test required by the courts is a rationality test. The rationality test is basic to the assessment of competency to stand trial, but a complete assessment of criminal responsibility includes the will (or decisional capacity), necessary in deliberating and acting upon a specific intent. An individual's will includes the following faculties: to control, to choose, to decide, to have knowledge of consequences, to be accountable for actions. It is necessary for rational interaction with others and the environment. The thinking of psychopaths is frequently irrational at a deeper level, so much so that their cognitive capacity is often impaired. As Schneider and Nussbaum (2007) stated, they have difficulty in "processing and responding appropriately to the emotional and moral dimensions of a situation" (p. 167), and they show deficits in the cognitive and emotional spheres.

Some legal scholars question the rationality test that Morse stated is at the basis of the legal system approach to criminal responsibility. Felthous (2009) seems to disagree with a pure rationality principle, writing that "[t]he law's approach to mental criminal responsibility...can best be described as normative functionalism on the basis of presence or absence of certain capacities or functional abilities or by the specific actual, active functions such as specific intent and deliberation" (p. 8). Those normative functions important for a finding of criminal responsibility are functional parts of the will: consciousness, self control, rationality, intentionality, choice and deliberation.

Cognitive and volitional factors, essential in the determination of free will and necessary for normal human interactions, are basic in the assessment of psychopathic offenders' legal responsibility for criminal acts. When those assessments conclude that offenders are legally insane the findings should be based on the fact that they have been

found to be suffering from impairment of those factors. To this effect Buchanan (2008), wrote, "Criminal responsibility requires, broadly speaking, the same kind of mental [cognitive] abilities that are required before someone can validly enter into a contract or make a will...[so] we want people to have been making a proper choice to act as they did before we hold them responsible, or, at least, fully responsible" (p. 26).

The aggressive behavior of psychopaths is central to a discussion of their criminal responsibility. As discussed throughout this chapter, they show poor control of their aggressive instincts. Their aggression is mostly instrumental and goal directed (Blair, 2001) and "[t]hey show severe difficulties in aversive conditioning and instrumental learning....[and] in processing the fearfulness and sadness of others (Blair, 2003, p. 5.) Their aggressivity and degree of psychopathy is supported by various studies showing changes in some brain structures and functions (e.g., Kiehl et al., 2001; Raine et al., 2000; Tiihonen et al. (2000). Consideration of biological correlates and neuroimaging findings are important in the assessment of criminal responsibility and when used in the forensic assessment they bring a paradigm shift from a neurophilosophical perspective to a brain-behavior one (Witzel, Walter, Bogerts, Northoff, 2008). It is probable that in the future they will become ever more helpful, as for example, DNA has been in determining criminal responsibility, and even at present they should be an essential adjunct in the clinical decision making used to assess responsibility, responsibility that ultimately should be based on a free and voluntary act. But the workings of the human mind are more complex and complicated than is revealed by new technologies. In view of the gross impact that neuroscience seems to have on criminal law at present one should opt for prudence in its application. The self cannot be totally described on the basis of technology and behavior is not limited to states of the brain, isolated from the world. Mental states are a dynamic process dealing with beliefs and desires. In the process the volitional activity the individual self is moved by intentions and emotions.

Conclusion

Although it is commonly accepted that the universe obeys natural laws, humans have intuitive feelings that they are endowed with the capacity to freely choose what they want to do and whether they want to control their actions. Compatibilistic theorists believe that human beings, even though partially subjected to determinism in their behaviors, are still able to make free and conscious decisions. According to the explanations of Libet (1999; 1983), they are able to make a conscious decision to veto (or not veto) whatever their unconscious had prepared them to decide or to will. "The role of conscious free will would be, then, not to initiate a voluntary act, but rather to control whether the act takes place" (Libet, 1999, p. 54). It is an act of selection by the conscious will and decision about which one of the unconscious initiatives should be vetoed or should go forward to action.

This is not unusual for the workings of the mind; the

unconscious generally does the ground work for the conscious. The conscious ego frequently only decides or wills behavior. Without the unconscious, the conscious mind would be a chaotic arena, inundated by numerous informative facts, requirements or rearrangements, and the self could not function. That is why the unconscious is also important. It is where the brain stores and uses information and prepares solutions for the signature of the self and where much thinking is done.

Psychopaths, in their life course and specifically in their aggressive behavior, are certainly under the effect of genetic-biological factors and environmental stimuli and they seemingly lack control and are prey to impulsivity, even though their aggression is generally considered instrumental. They place themselves above the laws of society, possibly due to inner feelings of inadequacy and previous rejection. They basically know, but obviously disregard, the entity, quality and consequences of their actions. Even though he had deep psychiatric problems, Jeffrey Dahmer, the serial killer, was the epitome of the above (Palermo, 2004).

In summary, psychopathic criminal behavior is not only due to a personal decision to act (or a decision not to act) but also to predisposing factors – biological, genetic and environmental. Therefore, their aggressive behavior should be viewed within a compatibilistic theoretical approach (the coexistence of free will and determinism) and, if found guilty, the question of diminished responsibility should be considered before deciding their punishment.

Punishment should be, ideally, proportionate to the crime committed. In the utilitarian theory punishment is right if it produces a positive outcome (Bentham, 1830). Its purpose should be to make offenders reflect that what they did was wrong or is considered wrong, is not to be repeated, and obviously to be corrected in any future behavior. Kant ([1797] 1985), the most famous proponent of retributive punishment, believed that punishing offenders is a "must" and that not to punish them is morally wrong. Society, however, argues Grachek (2006), should not punish those who cannot profit from it, such as the mentally ill who, in spite of punishment, continue to be unable to conform their conduct to the law, in which case it would serve no purpose. Indeed, even though retribution has beneficial effects for some, psychopathic offenders, though deserving punishment for their criminal acts, need a different, perhaps more lenient, kind of punishment than criminals found to be legally sane, one that takes into consideration the unique factors that contributed to their criminal misconduct.

References

- Alexander, F. (1948). *Fundamentals of psychoanalysis*. New York, NY: Norton.
- Alexander, F., & Ross, H. (1952). *Dynamic psychiatry*. Chicago, IL: University of Chicago Press.
- American Psychiatric Association (APA) (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Text Revision. Washington, DC: American Psychiatric Association.
- Arieti, S. (1967). *The intrapsychic self*. New York, NY: Basic Books.
- Aristotle (1975). The Loeb classical library. *The Nicomachean ethics*. G. P. Goold (Ed.), H. Rackham (Trans.). London: William Heinemann.

- Arrigo, B.A., & Shipley, S. (2001). The confusion over psychopathy (I): Historical considerations. *International Journal of Offender Therapy and Comparative Criminology*, 45, 325-344.
- Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Sciences*, 1, 2, 164-180. Retrieved from <http://des.emory.edu/mfp/Bandura2006PPS.pdf>.
- Bentham, J. (1830). *The rationale of punishment*. London: R. Heward.
- Blackburn, R. (1993). *The psychology of criminal conduct: Theory research and practice*. New York, NY: J. Wiley.
- Blair, R. J. R. (2001). Advances in neuropsychiatry: Neurocognitive disorders, and psychopathy models of aggression, the antisocial personality disorders and psychopathy. *Journal of Neurology, Neurosurgery and Psychiatry*, 71, 727-731.
- Blair, R. J. R. (2003). Editorial: Neurological basis of psychopathy. *The British Journal of Psychiatry*, 182, 5-7.
- Boas, G. (1972). French philosophy. In In P. Edwards (Ed.) *The Encyclopedia of Philosophy*, (vols. 1 & 2) (pp. 238-249). New York, NY: Macmillan & The Free Press.
- Buchanan, A. (2008). Commentary: Freedom and function. *Journal of the American Academy of Psychiatry and the Law*, 36, 25-26.
- Cashmore, A. R. (2010). *The Lucretian swerve: The biological basis of human behavior and the criminal justice system*. Retrieved from <http://www.pnas.org/content/early/2010/02/04/091516110>.
- Caspi, A., McClay, J., Moffitt, T. E., Mill, J., Martin, J., Craig, I. W., et al. (2002). Role of genotype in the cycle of violence in maltreated children. *Science*, 297, 851-854.
- Caspi, A., McClay, J., Moffitt, T. E., Mill, J., Martin, J., Craig, I. W., et al. (2002). Role of genotype in the cycle of violence in maltreated children. *Science*, 297, 851-854.
- Cleckley, H. (1955). *The mask of sanity: An attempt to clarify some issues about the so-called psychopathic personality*. St. Louis, MO: C. V. Mosby Company.
- Davessa, M. T. (2010). Early environmental predictors of the affective and interpersonal constructs of psychopathy. *International Journal of Offender Therapy and Comparative Criminology*, 54, 6-21.
- Descartes, R. (1999). *The philosophical writings of Descartes* (vol. I). J. Cottingham, R. Stoothoff, & D. Murdoch (Trans.). Cambridge, UK: Cambridge University Press.
- DiTullio, B. (1971). *Principii di criminologia generale e clinica e psicopatia sociale* (Principals of General and Clinical Criminology and Social Psychopathy). Rome: Istituto di Medicina Sociale.
- Eccles, J. C. (1989). *Evolution of the brain*. New York, NY: Routledge.
- Famous American Trials. Illinois vs. Nathan Leopold and Richard Loeb. 1924. Retrieved from <http://www.law.umkc.edu/faculty/projects/trials/leoploeb/leopold.htm>.
- Felthous, A. R. (2008). The will: From metaphysical freedom to normative functionalism. *Journal of the American Academy of Psychiatry and the Law*, 35, 16-24.
- Frankfurt, H. (1969). Alternate possibilities and moral responsibility. *Journal of Philosophy*, 66 (23), 829-839.
- Frankfurt, H. (1988). *The importance of what we care about: Philosophical essays*. New York, NY: Cambridge University Press.
- Freud, S. (1961). *Civilization and its discontents*. J. Strachey (Trans.). New York, NY: Norton.
- Glenn, A. L., & Raine, A. (2009). Psychopathy and instrumental aggression: Evolutionary, neurobiological, and legal perspectives. *International Journal of Law and Psychiatry*, 32, 253-258.
- Goldberg, E. (2001). *The Executive Brain: Frontal Lobes and the Civilized Mind*. New York: Oxford University Press.
- Goleman, D. (1995). *Emotional Intelligence*. New York, NY: Bantam Books.
- Goodman, M., Triebwasser, J., Shah, S., & New, A. S. (2007). Neuroimaging in personality disorders: Current concepts, findings and implications. *Psychiatric Annals*, 37, 100-108.
- Gracheck, J. E. (2006). The insanity defense in the twenty-first century: How recent United States Supreme Court case law can improve the system. *Indiana Law Journal*, 81, 1479-1501.
- Halleck, S. L. (1967). *Psychiatry and the dilemma of crime*. New York, NY: Harper and Row/Hoeber Medical Books.
- Hare, R. D. (1993). *Without conscience: The disturbing world of the psychopaths among us*. New York, NY: Simon & Schuster.
- Hare, R. D., & Jutai, J. W. (1983). Criminal history of the male psychopath: some preliminary data. In K. T. Van Dusen & S. A. Mednick (Eds.), *Prospective studies of crime and delinquency. (Longitudinal research in the behavioral, social and medical studies)* (pp. 225-236). Boston, MA: Kluwer-Nijhoff.
- Hariri, A. R., Drabant, E. M., Munoz, K. E., Kolachana, B. S., Mattay, V. S., Egan, M. F., & Weinberger, D. R. (2005). A susceptibility gene for affective disorders and the response of the human amygdala. *Archives of General Psychiatry*, 62, 146-152.
- Hariri, A. R., Mattay, V. S., Tessitore, A., Kolachana, B., Fera, F., Goldman, D., Egan, M. F., & Weinberger, D. (2002). Serotonin transporter genetic variation and the response of the human amygdala. *Science*, 297, 400-403.
- Juth, N., & Lorentzon, F. (2010). The concept of free will and forensic psychiatry. *International Journal of Law and Psychiatry*, 33, 1-6.
- Kant, I. ([1797] 1985). The right to punish. In J. G. Murphy (Ed.), *Punishment and rehabilitation* (2nd ed.) (pp. 20-23). Belmont, CA: Wadsworth.
- Kant, I. (2008). *Kant's critiques: The critique of pure reason the critique of practical reason, the critique of judgement*. Radford, VA: A & D Publishing.
- Kauffman, W. (1974). *Nietzsche: Philosopher, psychologist, antichrist* (4th ed.). Princeton, NJ: Princeton University Press.
- Kawohl, W., & Habermeyer, E. (2007). Free will: Reconciling German civil law with Libet's neurophysiological studies on the readiness potential. *Behavioral Sciences and the Law*, 25, 309-320.
- Kernberg, O. F. (1992). *Aggression in personality disorders and perversions*. New Haven, CT: Yale University Press.
- Kiehl, K. A., Smith, A. M., Hare, R. D., Mendrek, A., Forster, B. B., Brink, J., & Liddle, P. F. (2001). Limbic abnormalities in affective processing by criminal psychopaths as revealed by functional magnetic resonance imaging. *Biological Psychiatry*, 50, 677-684.
- Klein, M. (1935). A contribution to the psychogenesis of manic-depressive states. *International Journal of Psychoanalysis*, 16, 145-174.
- Koch, J. L. (1891). *Die psychopathischen Mindervertigkeiten (The psychopathic inferiorities)*. Ravensburg, Germany: Ravensburg.
- Kohlberg, L. (1984). *The psychology of moral development: The nature and validity of moral stages*. San Francisco, CA: Harper & Row.
- Kohut, H. (1971). The psychoanalytic study of the child. Monograph No. 4. In: *The analysis of the self*. New York, NY: International University Press.
- Kornhuber, H., & Deecke, L. (1964). Hirnpotentialanderungen bei willkurbewegungen und passive bewegungsmgen des menschen: Bereitschaftspotential un reafferente potentielle. *Pflügers Arch Gesamt Physiol Menschen Tiere (Pflüger Archiv: European Physiology)*, 248, 1-17.
- Kraepelin, E. (1915). *Psychiatrie: Ein lehrbuch (Psychiatry: A textbook)*, (8th ed., vol. 4). Leipzig, Germany: Barth.
- Le Doux, J. (1996). *The emotional brain: The mysterious underpinning of emotional Life*. New York, NY: Simon & Schuster.
- Libet, B. (1999). Do we have free will? *Journal of Consciousness Studies*, 6, 47-57.
- Libet, B., Gleason, C. A., Wright, E. W., & Pearl, D. K. (1983). Time of conscious intention to act in relation to onset of cerebral activity (readiness potential): The unconscious initiation of a freely voluntary act. *Brain*, 106, 623-642.
- Lombroso, C. (1889). *L'uomo delinquente (The criminal man)* (4th ed.). Torino: Bocca.
- Macdonald, J. M. (1961). *The murderer and his victim*. Springfield, IL: Charles C Thomas.

- Mahler, M. (1972). A study of the separation-individuation process. *Psychoanalytic Study of the Child*, 26, 403-424.
- Maudsley, H. (1896). *Responsibility in mental disease*. New York, NY: D. Appleton & Co.
- Morse, S. (2007). The non-problem of free will, in forensic psychiatry and psychology. *Behavioral Sciences & the Law*, 25, 203-220. Retrieved from: <http://papers.ssm.com.abstract=982192>.
- Nietzsche, F. (1978). *Thus spoke Zarathustra: A book for none and all*. W. Kaufmann (Ed. & Trans.). New York, NY: Penguin Books.
- Nietzsche, F. (1998). Beyond good and evil: Prelude to philosophy of the future. Marion Faber, (Ed. and Trans.) New York, NY: Oxford University Press.
- Palermo, G. B. (2004). *The faces of violence* (2nd ed). Springfield, IL: Charles C Thomas.
- Palermo, G. B. (2010). Environmental correlates of aggressive behavior. *Journal of Forensic Psychology Practice*, 10, 300-324.
- Pereboom, D. (2001). *Living without free will*. Cambridge, UK: Cambridge University Press.
- Piaget, J. (1932/1965). *The moral judgment of the child*. M. Gabain (Trans.). London: Routledge & Kegan Paul.
- Pinel, P. (1801/1962). *A treatise on insanity*. (D. Davis, Trans.). New York, NY: Hafner.
- Porter, S., Birt, A. R., & Boer, D. P. (2001). Investigation of the criminal and conditional release profiles of Canadian federal offenders as a function of psychopathy and age. *Law and Human Behavior*, 25, 647-661.
- Prichard, J. C. (1835). *A treatise on insanity and other disorders affecting the mind*. London, UK: Sherwood, Gilbert, & Piper.
- Raine, A., Lencz, T., Bahrle, S., LaCasse, L., & Colletti, P. (2000). Reduced prefrontal grey matter volume and reduced autonomic activity in antisocial personality disorder. *Archives of General Psychiatry*, 57, 119-127.
- Raine, A., Meloy, J. R., Bahrle, S., Stoddard, J., LaCasse, L., & Buchsbaum, M.S. (1998). Reduced prefrontal and increased subcortical brain functioning assessed using positron emission tomography in predatory and affective murderers. *Behavioral Sciences & the Law*, 16, 319-332.
- Redding, R. E. (2006). The brain disordered defendant: Neuroscience and legal insanity in the twenty-first century. Retrieved from *Villanova Public Law and Legal Theory Working Paper Series*, No. 2006-17, 1-78. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=937349.
- Roskies, A. (2006). Neuroscientific challenges to free will and responsibility. *Trends in Cognitive Sciences*, 10 (9), 419-423.
- Rush, B. (1812). *Medical inquiries and observations upon the diseases of the mind*. Philadelphia, PA: Kimber & Richardson.
- Rutter, M. (2006). *Genes and Behavior: Nature-Nurture Interplay Explained*. Oxford: Blackwell.
- Sartre, J. P. (1956). *Being and nothingness*. New York, NY: Washington Square Press.
- Schilder, P. (1942). *Goals and desires of man: A psychological survey of life*. New York, NY: Columbia University Press.
- Schneider, R., & Nussbaum, D. (2007). Can the mad be bad? *Criminal Law Quarterly*, 53, 162-182.
- Schopenhauer, A. (2003). Prize essay on the freedom of the will. G. Zoller (Ed.) & E. F. J. Payne (Trans.). Cambridge, UK: Cambridge University Press.
- Schwartz, J. M., & Begley, S. (2003). *The mind and the brain: Neuroplasticity and the power of mental force*. New York, NY: Harper-Collins.
- Sherrington, C. (1933). *The brain and its mechanism*. Cambridge, UK: Cambridge University Press,
- Smilansky, S. 2000. *Free will and illusion*. New York, NY: Oxford University Press.
- Swann, A. C. (2003). Neuroreceptor mechanisms of aggression and its treatment. *Journal of Clinical Psychiatry*, 64, 26-35.
- Taylor, R. (1972). Determinism. In P. Edwards (Ed.) *The Encyclopedia of Philosophy*, (vols. 1 & 2) (pp. 359-373). New York, NY: Macmillan & The Free Press.
- Tiihonen, J., Hodgins, S., Vaurio, O., Laakso, M., Repo, E., Soininen, H., et al. (2000). Amygdaloid volume loss in psychopathy [Abstract]. *Society for Neuroscience Abstracts*, 2017.
- Volavka, J. V. (1995). *Neurobiology of Violence*. Washington, DC: American Psychiatric Press.
- von Kraft-Ebing, R. (1922). *Psychopathia Sexualis with a special reference to the antipathic sexual instinct: A medico-forensic study*, rev. ed. F.J. Rebman (Trans.). New York, NY: Medical Art Agency.
- Wilson, E. O. (1998). *Consilience. The unity of knowledge*. New York, NY: Alfred A. Knopf.
- Wilson, J. Q., & Herrnstein, R. J. (1985). *Crime and human nature: The definitive study of the causes of crime*. New York, NY: Basic Books.
- Winnicott, D. (1953). Transitional objects and transitional phenomena, *International Journal of Psychoanalysis*, 34, 89-97.
- Witzel, J., Walter, M., Bogerts, B., & Northoff, G. (2008). Neuropsychological perspectives of neuroimaging in forensic psychiatry - Giving way to a paradigm shift? *Behavioral Sciences & the Law*, 26, 113-130.
- Yochelson, S., & Samenow, S. E., (1976). *The criminal personality Vol. I. A profile for change*. New York, NY: Jason Aronson.