

CRIMINAL RESPONSIBILITY AND LEGAL INSANITY

In Davies, Beech and Colloff:

Forensic Psychology: Crime, Justice, law, Interventions. Fourth Edition.

Wiley-Blackwell (2023)

JOHN MATTHEW FABIAN

Learning outcomes

By the end of this chapter, you should be able to:

- Understand the circumstances which allow a criminal defendant to plead not guilty by reason of insanity and diminished capacity.
- Appreciate the work required by forensic mental health professionals to examine and analyse a defendant's retrospective account of their past mental state.
- Have awareness that in addition to traditional psychological testing and psychiatric interviewing, neuroscientific approaches are now being employed in some insanity cases.

15.1. Introduction

This chapter will explore the history and caselaw as well as describe the forensic mental health assessment of criminal responsibility, and in particular - the *not guilty by reason of insanity* defence in criminal cases. Particularly, the mental illness defence will be explored through examination of case law and case studies from the United States in which the author has been involved.

15.2. What is Legal Insanity?

Society has long distinguished those defendants who are charged and convicted of a crime who deserve punishment and rehabilitation within the criminal justice system, and those who are deemed to not be responsible for their criminal acts due to mental illness. Criminal sanctions and sentencing promote public safety through the deterrent effect of the punishment itself and the stigma of criminal conviction (Winkel, 2013). However, those with mental illness often lack a criminal motive; rather, they have an irrational motive that is rooted in a psychiatric disorder.

Punishment cannot serve as a deterrent for those who are mentally ill. For this group, society appreciates a need for treatment, while considering the least restrictive environment and protection of the public.

Within the criminal justice system, the main goal of the prosecutor in criminal cases is to establish the guilt of the defendant by proving the defendant possessed criminal intent and in fact committed the crime. There are elements of the crime that a prosecutor must prove, including any requisite mental state element for each offence charged (Schabas, 2016). For a person to be convicted, two essential elements must be proven:

- The intention to commit an unlawful act (mental element and *mens rea*), and
- The unlawful act was committed (the physical element and *actus reus*).

Hence, the prosecution must prove that the defendant had a guilty mind (*mens rea*) when committing the crime; so if the defendant was involved in the criminal behavior without the intention to commit the crime they may not be convicted of that offence.

15.2.1. History of the Insanity Defence

The insanity defence first emerged in the *good and evil test* in the early 14th century in a case involving the moral capacity of a child under the age of 7. Referencing the moral doctrine of the medieval theological literature, it held that the criminally insane, like children, lack capacity of sinning against their will (Platt & Diamond, 1966).

A British case, *Rex v. Arnold* (1724) introduced the *wild beast test*. The defendant had shot and wounded a Peer of the Realm. The Judge instructed the jury that it should acquit the defendant and find him not guilty by reason of insanity because “a madman... must be a man that is totally deprived of his understanding, memory, and doth not know what he is doing, no more than a brute, or a wild beast, such a one is never the object of punishment.” Notably, the judge’s instruction focused on a lack of cognitive and intellectual ability, and this insanity defence was utilized for at least 30 years. This *right and wrong test* was further developed in *Regina v.*

Oxford (1840), in which the jury was instructed that it must determine whether the defendant “from the effect of a diseased mind” knew the act was wrong, and that question must be answered as to whether “he was quite unaware of the nature, character, and consequences of the act he was committing.” The *Irresistible Impulse test* was first used successfully in this case: the judge opined: “if some controlling disease was...the acting power within him which he could not resist, then he will not be responsible.”

The modern approach to the legal insanity defense dates from 1843 in England with the introduction of the M’Naghten standard. Daniel M’Naghten had a long history of psychosis and delusions manifesting a belief that members of the governing Tory party were persecuting him and planning his murder. Subsequently, he went to London in an attempt to kill the then Prime Minister, but instead, murdered the prime minister’s secretary. The M’Naghten case raised the insanity defence, using the standard at the time of whether the defendant knew right from wrong and M’Naghten was found not guilty by reason of insanity (NGRI). This verdict caused a public outcry; many saw the M’Naghten ruling as a threat to public safety, including Queen Victoria who had herself been the victim of assassination attempts where one of the perpetrators had also been found legally insane. As a consequence of M’Naghten’s acquittal, the House of Lords ordered a group of senior judges to draw up a strict definition of criminal insanity that could be used in future criminal trials. The *M’Naghten rule* (or standard) was defined by the Lord Chief Justice as “that every man is to be presumed to be sane, and ... that to establish a defence on the ground of insanity, it must be clearly proved that, at the time of the committing of the act, the party accused was labouring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing; or if he did know it, that he did not know he was doing what was wrong” (*R v. M’Naghten, 1843*). M’Naghten became the standard test for criminal insanity in relation to mentally disordered defendants in many common law jurisdictions including the United Kingdom and the USA for over a century.

The Durham Rule was established in *Durham v. U.S.* (1954) and is commonly referred to as the “Product Standard.” This insanity standard states that if a defendant’s criminal behavior was a result or a “product of mental disease or defect,” then they could not be held responsible for their criminal acts, in which case they would be found legally insane. However, the problem with this insanity definition was its broadness. Many criminal behaviors could be considered a product of

a range of mental illnesses and there was a concern that this made the standard too all inclusive. For instance, general criminal behavior resulting from an antisocial and criminal personality could be argued as fulfilling this definition.

In English Law, the concept of irresistible impulse was developed in a 1960 case, *R v. Byrne*. The defendant was a violent sexual psychopath who murdered and mutilated a woman. It was thought that the defendant, Byrne, had such strong sexual desires and was so sexually violent that he had no control over his behaviours. The Lord Parker C.J. expanded the definition of “abnormality of mind” to “the ability to exercise will-power to control acts in accordance with “their” rational judgment”. The US Court of Appeals clarified the legal definition of mental disease in *McDonald v. United States* (1962) and referred to mental disease as “any abnormal condition of the mind which substantially affects mental or emotional processes and substantially impairs behavioural controls.” Importantly, this definition recognized not only mental and emotional processes, but also behavioral control. Consequently, in 1962, the American Law Institute proposed a Model Penal Code (MPC) standard for the insanity defence as follows:

"A person is not responsible for criminal conduct if at the time of such conduct as a result of mental disease or defect he lacks substantial capacity either to appreciate the criminality of his conduct or to conform his conduct to the requirements of the law" ... "mental disease or defect" does not include an abnormality manifested only by repeated criminal or otherwise antisocial conduct" [ALI, 1985, Section 4.01].

This Insanity Standard essentially substituted ‘knowledge’ of wrongfulness to ‘appreciate’ wrongfulness and also added a volitional impairment element: “conform his conduct to the requirements of the law”.

Knowledge of the nature and quality of one’s acts is complicated. Concerning knowledge of the nature of one’s acts, a quintessential example is when a person strangled their mother believing they were a lemon, then they would not know the nature and quality of the act. When considering the issue of quality, an individual’s mental illness could compromise their ability to appreciate its consequences. The wrongfulness argument is more straightforward, referring to

one's ability to know right from wrong. However, there is debate and case law distinguishing whether one's ability to know the wrongfulness is strictly related to knowledge of legal as opposed to moral wrongfulness. In essence, there are three types of wrongfulness that can be considered in insanity evaluations:

- Legal wrongfulness includes evidence of the defendant's knowledge of their conduct;
- Subjective moral wrongfulness represents the defendant's belief that their acts are morally justified despite knowledge of illegality;
- Objective moral wrongfulness represents the defendant's lack of capacity to know society considers their acts as wrong.

In a highly publicized Texas maternal filicide case of Andrea Yates, Ms. Yates confessed to drowning five of her children in a bathtub in 2001. She had evidence of severe postpartum depression and psychosis with schizophrenia (schizoaffective disorder depressed type). The State of Texas insanity statute reads: A) It is an affirmative defence to prosecution that, at the time of the conduct charged, the actor, as a result of severe mental disease or defect, did not know that his conduct was wrong; B) The term "mental disease or defect" does not include an abnormality manifested only by repeated criminal or otherwise antisocial conduct.

The defence argued that while Ms. Yates called both the emergency services and her husband immediately following the drowning but professed that she acted in a morally right and justified manner. In contrast, the prosecution argued that immediately following the murders, Ms. Yates in her phone calls informed them of what she had done and requested help, which would indicate knowledge of the consequences and, in part, the legal consequences of her criminal acts. This case took some extraordinary turns, before Ms. Yates was found sane and sentenced to death. However, the Texas Criminal Court of Appeals ordered a retrial, where she was found legally insane and hospitalized indefinitely in the State's Maximum Security Hospital.

John Hinckley Jr. attempted to assassinate U.S. President Ronald Reagan in 1983. The President was seriously injured in the shooting, and three other members of his entourage were also wounded. Hinckley was psychotic and suffered from a delusional disorder and sought fame to impress actress Jodie Foster, for whom he had an obsessive fixation. A heated, publicized criminal trial ended with Hinckley's being found not guilty by reason of insanity, and he was subsequently hospitalized but was eventually released in 2022. There was a profound public outcry concerning the insanity acquittal of Hinckley, subsequently the United States Congress and a number of states revised their insanity laws, and Idaho, Montana, Utah and Vermont abolished the insanity defence.

The U.S. Congress passed the Insanity Defence Reform Act of 1984 (IDRA), reading "it is an affirmative defence to a prosecution under any federal statute that, at the time of the commission of the acts constituting the offence, the defendant, as a result of a severe mental disease or defect, was unable to appreciate the nature and quality or the wrongfulness of his acts". The IDRA Standard altered the ALI Standard by requiring a "severe" mental disease and eliminating the volitional aspect of the defence. The IDRA Standard also shifted the burden of proof from the prosecution to the defence, and the latter had to persuade the jury that the defendant was insane at the time of the offence. Furthermore, the Standard held the defendant to an even higher standard, requiring proof of insanity by clear and convincing evidence.

Another consequence of the Hinckley trial was the public concern that forensic mental health professionals played too large a role in the insanity trial and its outcome. After the Hinckley trial, 12 states established a separate verdict of "guilty but mentally ill" (GBMI) (Bradley, McGraw, Farthing-Capowich & Keilitz, 1985). Hence, by design, the defendant would be able to access psychiatric treatment within the prison system rather than the state hospital system.

Typically in the United States, during an insanity trial, a jury is not informed of the consequences of finding a defendant not guilty by reason of insanity. In some states (subject to statutes), only the jury themselves will be allowed to determine if the defendant had a severe mental disease or defect and whether they knew right from wrong and will not receive notice from the judge that the defendant will be civilly committed into a state hospital system indefinitely.

Frey (1983) argues that the GBMI verdict authorizes a conventional criminal sanction in addition to psychiatric treatment to those who sought to be found not guilty by reason of insanity. In contrast, some perceive that the GBMI statute as punishing the insane (Melville & Naimark, 2002), while opponents argue that it may be a shortcut to a verdict, avoiding the arduous moral and social issues raised by an insanity defence (Melville and Naimark, 2002). Supporting this argument are experiments in research using mock juries (see Chapter 13). Roberts and colleagues (1987) found that in cases involving mental illness, mock jurors used the GBMI verdict two-and-a-half times more often as guilty or NGRI, further noting that the rate of GBMI verdicts was unaffected by the severity of the defendant's mental illness.

15.2.2. Diminished Capacity and Self-Defence Mental State Evidence

The *not guilty by reason of insanity defence* focuses typically on whether the defendant had a severe mental disease or defect and did not know the nature, quality and/or wrongfulness of their offence (s) or lacked the capacity to conform their behaviour to the requirements of law. The *diminished capacity defence* also concerns whether they had the requisite intent to commit the offence (s). In *State v. Phipps* (1994), the Tennessee Criminal Appeals Court addressed diminished capacity, "Diminished capacity is not a defense that absolves the accused from culpability; rather, it is a rule of evidence which allows the introduction of evidence to negate the existence of specific intent when a defendant is charged with a specific intent crime. While the insanity defence emphasizes and typically requires a severe mental disease or defect finding, in diminished capacity cases, the defendant may have such a disorder but also can have a less serious disorder that still affected their state of mind at the time of the crime. The person may be less psychotic in their severity of functioning and also may experience a transitory confused and disrupted mental state and such a mental state may be induced by drugs or alcohol. When a diminished capacity defence is raised, the question is not the extent to which a defendant to criminal charges should be considered guilty, but rather of what precise crime the defendant is in fact guilty".

In this author's experience, the diminished capacity defence is most often applied in murder cases and considers the issue of whether the defendant intentionally killed another.

Premeditation in some states is referred to as prior calculation and design and requires forethought of intentional killing prior to the act. For example, in the State of Washington, the Diminished Capacity-Defence (WPIC 18.20) reads, “Evidence of mental illness or disorder may be taken into consideration to determine whether the defendant had the capacity to form the requisite mental state.” Concerning the charge of murder, the jury must be instructed as to:

- The crime charged must include the particular mental state as an element;
- The defendant must present evidence of mental disorder;
- Expert testimony must logically and reasonably connect the defendant’s alleged mental condition with the asserted inability to form the mental state required for the crime charged.

The defendant is entitled to a more specific instruction on diminished capacity whenever there is substantial evidence of such a condition and such evidence logically and reasonably connects the defendant’s alleged mental condition with the inability to possess the required level of culpability to commit the crime charged (*State v. Griffin*, 1983).

Case Study 15.1.

This author evaluated a 28-year-old male that was charged with murder in which the crime was recorded on street video revealing an adult male victim being shot in the head. Defendant, Jeremy, shot the victim multiple times causing death. Surveillance video revealed that Jeremy ran after the victim aimed a gun at the victim, firing four shots. Still video shots showed immediately prior to Jeremy firing his weapon, the victim pulled something from his shirt sleeve that looked like a gun and momentarily aimed at Jeremy. Jeremy was interviewed by this author and felt as though he was in fear of his life at the time of the murder. Jeremy had a history of witnessing and experiencing street violence and was in fact was robbed at gunpoint a month before this offence. Jeremy had evidence of neurodevelopmental disorders including ADHD and multiple learning disorders with a Full-Scale IQ of 79. He experienced early trauma and PTSD, learning disorder and low IQ, ADHD, multiple concussions, a drug-related overdose, and was subject to the chronic neurocognitive effects of marijuana. Ultimately there was evidence of significant brain dysfunction in a number of areas of neuropsychological assessment. The

attorney presented elements of diminished capacity defence, as well as fight-flight phenomenon related to the neurobiological components of trauma activating the body's biological stress response system. These arguments were made during the pre-trial period, and diminished capacity information, was utilized to secure a plea bargain, and as mitigating evidence at sentencing.

-

15.2.3. The U.S. Supreme Court Landmark Case Law (Insanity and Diminished Capacity)

A landmark U.S. Supreme Court case, (*Clark v. Arizona*, 2006) upheld the constitutionality of the State of Arizona's insanity defence. Eric Clark believed his hometown in Arizona had been overtaken by aliens and shot and killed a police officer. Clark had a diagnosis of paranoid schizophrenia. Clark wanted to use evidence not only to prove that he was insane (he had the burden of proof to prove his insanity), but also to show that he could not form the criminal intent that the government was required to prove beyond a reasonable doubt. The trial judge ruled that Arizona law limited the use of expert testimony and evidence to his insanity claim and did not allow him to address the *mens rea* diminished capacity issue pertaining to his ability to form the necessary criminal intent. The trial court ruled that Clark did not sufficiently prove his insanity defence, and he was convicted and sentenced to 25 years to life in prison, which the Arizona Court of Appeal confirmed.

The prosecutor offered circumstantial evidence that Clark knew the victim was a police officer and presented testimony indicating Clark had previously stated that he wanted to shoot law officers and that he had lured the victim to the scene to kill him. The defence argued that Clark was mentally ill, and again sought to introduce his mental illness to address two legal questions: 1) he raised the affirmative defence of insanity; and 2) rebutted the prosecution's evidence of the requisite *mens rea* and that he acted intentionally or knowingly to kill a police officer. The U.S. Supreme Court ruled in a 5-4 decision in favour of Arizona legislation and that the trial court could limit the use of expert evidence of a defendant's mental state to a person's insanity defence.

There was no argument that Clark was mentally ill, and had schizophrenia, when he shot the police officer. Clark believed that there were aliens who were out to get him, and he even hung fishing line in his room as a booby traps as well as wind chimes on the doors and windows to warn him of intruders. He also kept a bird in his car to warn him of different changes in air temperature, which he perceived could lead to possible intruders. The prosecution believed Clark was playing loud music in his car that night to lure the officer to his vehicle with a nuisance offence, and Clark mentioned to a friend that he also wanted to kill a police officer. The defence perceived that Clark was playing loud music to drown out the voices in his head, consistent with many who suffer from schizophrenia. The defence also argued that Arizona's insanity defence was essentially based on the M'Naghten Standard related to the defendant's cognitive capacity and whether the mental defect left the defendant unable to understand what he was doing. In contrast, the second part of the insanity defence presents a potential alternative basis for recognizing the defence of insanity as to whether a defendant lacked moral capacity (whether mental disease or defect leaves a defendant unable to understand that his action was wrong).

Clark argued that eliminating the cognitive capacity part offended fundamental principles of justice rooted in tradition. The Court ruled that history shows no deference to M'Naghten that could elevate its formula to the level of fundamental principle enough to limit the traditional recognition of the State of Arizona's capacity to define crimes and legal defences. The Court recognized that the 50 states had a variety of insanity standards, and this diversity made it clear that no particular insanity formulation had evolved into a rule or baseline for due process. Ultimately, the U.S. Supreme Court in *Clark v. Arizona* ruled that states have the freedom to define and utilize any insanity defence they want through legislation and the defendant does not have a due process right to apply mental disease evidence and testimony through expert witnesses to *mens rea* and diminished capacity issues.

15.3. Evaluating Criminal Responsibility and 'Not Guilty by Reason of Insanity' Defence

Forensic psychologists and psychiatrists are often requested to examine a client's mental state at the time of the offence (MSO), and in particular, the most common type of forensic legal referral is not guilty by reason of insanity, and in some states referred to as criminal responsibility. This

is a retrospective type of evaluation in which the forensic examiner (FE) will have to retrospectively look back in time at the defendant's mental state at the time of the instant offence. Importantly, the expert and the lawyer and potentially the court need to ensure that the criminal trial defendant is competent to stand trial before he can be evaluated for not guilty by reason of insanity. The history and assessment of competency to stand trial is addressed in another chapter in this book, but essentially pursuant to the *Dusky v. United States* (1960), the *Dusky Standard* reads: whether the defendant has "sufficient present ability to consult with his lawyer with a reasonable degree of rational understanding" and "has a rational, as well as factual understanding of the proceedings against him."

Importantly, a defendant can still be psychotic and be competent to stand trial. It is when his psychosis or other evidence of mental illness or brain dysfunction interferes with his ability to rationally understand, consult, assist in their defence and make rational legal decisions for example that can result in his incompetency. One of those legal decisions includes whether they appreciate that they have a mental illness, and if so, do they also appreciate and recognize that the mental illness has some type of nexus or connection to their offence. Additionally, a competent but mentally ill defendant must be able to recognize that his mental illness can be utilized as a legal defence that could benefit him. There are many cases in which the defendant lacks insight into their own mental illness, is extremely paranoid, and has no insight and appreciation as to how that illness affected his mental state and criminal offending behaviors at the time of the offence. One of the hallmark features of schizophrenia, for example, is a lack of insight (anosognosia) (Lehrer and Lorenz, 2014). When a defendant lacks this type of insight, they will also fail to understand how that mental illness affects their case: they may not want an insanity defence, because they do not believe they are mentally ill in the first place. When that occurs, they are typically not competent to stand trial because they cannot rationally appreciate their legal predicament and assist in their defence and make self-protective legal decisions that are in their own benefit including an insanity defence. When evaluating MSO cases including insanity, the FE must work as a detective, gathering as many documents and information around the time of the offence as possible. A list of some of this information gathered includes the following:

- Current and past police reports

- Witness and defendant statements (transcribed, audio, and video)
- Interview of collateral witnesses who knew the defendant around the time of the instant offence
- Crime scene photos
- Autopsy reports
- Psychosocial records including psychiatric and medical records
- Jail and prison records
- Jail, hospitalization, and EMS psychiatric/medical records immediately following the instant offence
- Telephone calls by defendant during pre-trial jail period
- Journals, letters, emails created by defendant during the pre-trial period.

Importantly, the defendant should be evaluated as close in time to the offence as possible in order to capture the richness and severity of the defendant's mental illness. Immediate evaluation of the offender's mental state is likely to be more accurate than a delayed evaluation as one's memory may be detrimentally affected by the effects of time and psychiatric medications that could impact the defendant's recollection of their offending behaviors.

Fortunately, in many cases, for a variety of legal and law enforcement reasons, the FE is not able to evaluate the defendant for an insanity defence until months or even years after the offence which makes the task of accurately evaluating the defendant more arduous and challenging. In fact, in many cases, the severely mentally ill defendant is found incompetent to stand trial and must be restored to competency in the state hospital system for long periods of time and once restored; they can then be evaluated for insanity by the FE.

The FE must obviously have an understanding of the particular legal insanity standard in each jurisdiction they are working in. As highlighted, in the United States, each state has their own insanity standard, and the federal government articulates one standard (IDRA) that is utilized in any federal case within any state.

As noted, typically, there are two and potentially three elements of these insanity statutes. When contemplating whether the person had a severe mental disease or defect at the time of the offence, this author typically refers to the severe mental disease element as to whether the defendant had mental illness and psychiatric disorder(s), and the mental defect element typically relates to neurodevelopmental and neurocognitive disorders such as intellectual disability, traumatic brain injury, and/or dementia conditions for example. The second element is to investigate the defendant's ability to essentially know right from wrong and/or appreciate the nature and quality of wrongfulness of their acts, and finally in some states, the third element relates to the defendant's ability to conform or control their conduct relevant to requirements of the law, which again has more of a volitional impairment and impulse control nature to it.

Obviously, the FE is trained in their ability to assess, diagnose, and treat psychiatric and mental disorders and will need to use their assessment skills to best determine the defendant's mental illness currently during their evaluation but also in the past at the time of the offence. Again, this is a retrospective analysis of one's mental state days, months, or even years after the crime and therefore relying on mental health records around the time of the offence and even before as establishing a history of mental disorder is important to consider. More difficult cases include a defendant who presents as mentally ill in the jail following their offence, yet they have no history of mental illness.

This author frequently examines NGRI murder cases and FEs should keep in mind that committing a murder or multiple murders can be an extremely traumatic event for the defendant. Committing such an act of violence can even lead to a psychotic break. Furthermore, making the evaluation process difficult is that such a traumatic event can lead to PTSD and even amnesia for a crime (Gawon, 2017). The FE should be aware that in about a third of homicide cases the defendant has some or total amnesia for the homicide. Obviously, there are a number of reasons a trial defendant may claim amnesia for an offence including genuine amnesia, such as through the symptoms of mental illness and often bipolar manic and psychotic episodes; the ingestion and intoxication of some types of drugs (Xanax, alcohol, and methamphetamine for example), and the traumatic nature of the offence. However, a defendant certainly could be in denial, feel shame or humiliation, and obviously can lie about their amnesia. Many murder defendants are in

denial of their crimes for a variety of reasons. In serious homicide cases where the defendant faces the death penalty, there may be long pre-trial periods with many opportunities for the FE and the trial team to build rapport with the defendant, sometimes leading to the defendant opening up and sharing their recall of the offence.

This author practices as both a forensic psychologist and a neuropsychologist, and considering the latter role, frequently uses neurocognitive effort and malingering tests in assessing a defendant. While those cognitive effort tests are typically simple learning and memory tests of word lists and visual pictures, and do not assess validity and malingering of declarative memory such as memory for events and memory for a homicide in particular, the assessments offer useful information. This author has evaluated a number of cases in which the defendant in a homicide case reported amnesia for the offence, but then faked their learning and memory for new information on the neuropsychological effort and malingering tests. Often there appears to be a relationship between the defendant's amnesia for the offence and their faking of memory tests which undermines the credibility of their amnesic claims.

As a forensic psychologist, there often has to be administration of psychological testing to the defendant to determine the genuineness of their mental illness versus whether they are malingering. Malingering essentially is defined as the exaggeration of psychological, psychiatric, and/or cognitive and neuropsychological deficits for external gain, and typically in criminal forensic cases, the gain would be to avoid prosecution and/or to be found NGRI and sent to a psychiatric facility, rather than be convicted and sentenced to prison, and in death penalty cases, sentenced to death. Therefore, psychological testing addressing malingering at the time of the evaluation is critical. Malingering can also be assessed by reviewing past and present mental health records, talking to corrections officers, reading correctional office records, and observing the inmate within their pre-trial jail and/or psychiatric facilities. Current psychological testing will only measure current psychiatric and psychological symptoms, and therefore will potentially not be relevant to their symptoms at the time of the offence.

Nonetheless, it is important to assess the defendant's response style and motivations in their interviews, and psychological testing is helpful with this. Criminal defendants who mangle in psychological testing will present as exaggerating their psychiatric symptoms now, and those

results can be extrapolated to how their perceptions were as to their mental state at the time of the offence. If they are malingered psychiatric symptoms now, the veracity and legitimacy of their claim of psychiatric symptoms at the time of the instant offence will likely not be valid.

15.2. Case Study

This author was commissioned to investigate the viability of an insanity defence for Kenneth, who was charged with capital murder on a college campus he was attending, in which he randomly stabbed another student to death and injured three fellow students. The police searched his house and found a full-sized samurai sword and dozens of spiral notebooks with hundreds of pages of handwritten notes and songs covering themes of existentialism, religion, spirituality, and science. Next to the notebooks were psychiatric medications that were not taken as prescribed. His bookbag recovered at the crime scene contained a Bible and a Jewish Kabbalah. I reviewed Kenneth's Twitter posts and noted that he had changed his name and referenced himself as a factorial Japanese street fighter.

Kenneth was born and raised in an intact family with no history of domestic violence or early childhood trauma. There were no developmental conditions or delays. He graduated from high school with a high grade-point average. He then was attending a major university. Kenneth withdrew from four of his classes in the semester prior to the homicide, showing some deterioration in cognitive and adaptive functioning in the period leading up to the incident, consistent with a budding schizophrenic condition. Along these lines, his parents described and documented dramatic changes in his emotional, psychological, behavioural, and cognitive functioning leading up to the offence. During the months leading up to the murder, Kenneth was charged with driving while intoxicated and had an inpatient psychiatric hospitalization. This hospitalization occurred within about a month before the murder and he was hyper-focused on reality and third and fifth dimensions. At that time, his family stated that nothing he said made sense and he was displaying tangential and disorganized speech and flights of ideas. During his stay, his urinalysis was negative for alcohol and drugs; he pulled out his Intravenous drips; was described as incoherent, disheveled and angry with incongruent mood, affect, and emotional responsiveness. His thought processes were irrational and illogical, and there was evidence of psychosis and schizophrenia. When this author saw him months after the homicide, he was

prescribed Oxcarbazepine (seizures), Zoloft (antidepressant), and Invega (antipsychotic). During my examinations, Kenneth said he was hearing multiple voices including the voice of God. He said he was named “One the devil.” He was hearing a variety of voices that were telling him about God and reality. He displayed grandiose and paranoid delusional beliefs aligned with God and demons.

As mentioned, amnesia for a traumatic event such as murder is not uncommon, especially when the person is in an acute psychotic and potentially manic state. Through this author’s interviews with Kenneth, it was clear that he had developed schizophrenia in the last couple of years leading up to the offence, and it became more intense over time in which he was experiencing primarily auditory hallucinations and delusions. His delusions were represented by a special theme of religion and his connection with God or other spiritual beings such as Jesus, and he perceived at times that he was in fact Jesus and believed he was a messenger of God and he was there to change the world.

Kenneth believed that he was able to read people’s minds but needed to be in hiding because the world needed him. He essentially displayed disorganized obsessional and delusional thinking about God, Jesus, the devil, and evil. There was a fusion between religious paranoid and grandiose delusional thinking that had been consistent throughout the evaluations and the mental health records reviewed. It became apparent that Kenneth, like many high-functioning young adults who have an onset of schizophrenia, are more likely to perceive their mental illness through a medical lens, such as through seizures and be more hesitant to consider a psychiatric causation.

In this case, this author diagnosed Kenneth with schizoaffective disorder mixed type with a history of bipolar manic and depressive episodes, and at the time of the offence, he had evidence of a bipolar manic psychotic episode. Notably, Kenneth had made a number of statements to the police and the news media before this author even evaluated him, but his statements for the most part were consistent. He endorsed paranoid thinking, perceived friends turning on him, and purchased a hunting knife a few days before the offence. He described experiencing a “glitch in my mind,” a confused mental state, and he was upset that no one was looking at him or

acknowledging him on campus. “The next thing you know there is a police officer behind me.” He did not believe he committed a crime and did recognize that he had confessed to the police. Kenneth denied personally knowing any of the victims. Kenneth told this author that people wanted to kill him, and when asked why he said, “It’s my mind.” He referenced the threat towards him may be “causing me destruction in my environment. Brains are built to give them accurate representation on how to drive forward.” He described feeling scared for his life.

This author was appointed by the defence, and both the prosecutor and judge accepted this author’s insanity finding, the judge ruling that Kenneth was legally insane at the time of the offence. It was this author’s opinion that under the state’s insanity standard, that Kenneth showed evidence of a severe mental disease, namely schizoaffective disorder with a psychotic/manic episode, and did not know that his conduct was wrong. There was no rational motive for the offence, and his self-report to all parties was aligned with psychotic symptomology and hallucinations and delusions.

15.3.1. Relevant Insanity Defence Statistics

In the USA, the insanity defence is only utilized in about 1% of criminal court cases and is only successful in about 26% of those court cases where it is raised. A recent meta-analysis by Kois and Chauhan (2018) studied the characteristics of a not guilty by reason of insanity offence. Their review covered 19,500 cases and found that older age, female sex, educational attainment, and unemployment were associated with insanity findings. Those classified as legally insane more frequently had psychiatric histories and psychotic disorder symptoms of schizophrenia, were less likely to have criminal histories, and more likely to have been found incompetent to stand trial in the past.

Norko and colleagues (2016) studied those adjudged legally insane in the State of Connecticut. They examined 365 acquittees who had been committed to the jurisdiction of the Psychiatric Security Review Board (PSRB), 177 individuals achieved conditional release (CR), and 250 acquittees had been discharged from PSRB jurisdiction over a 30-year period. The study highlighted the lack of research on insanity acquittees following release from supervision. In

their study, 16% of individuals discharged from the PSRB risk group were re-arrested, which is consistent with other discharged populations of offenders. Community supervision on conditional release prior to discharge from the PSRB had a statistically significantly decreased the risk of subsequent re-arrest, as did the length of stay in the hospital and duration of the commitment to the PSRB. Rabkin (1979) surveyed literature on arrest rates following discharge from a psychiatric hospital for those offenders with and without a prior history of arrests. This data sample revealed that those with such a history had significantly higher rates of post-discharge arrest (19% to 56% versus 2% to 4%). In essence, mentally ill offenders have a greater likelihood of recidivism if they have a prior criminal history.

15.3.2. What Happens to Those Found Legally Insane

Typically in the United States, an individual who is found not guilty by reason of insanity is then subject to civil commitment hearing proceedings through the original trial court. Since the defendant is found not guilty by reason of insanity and not given a criminal conviction, he is then subject to civil commitment proceedings. The trial court retains jurisdiction of the defendant. The majority of insanity acquittees are indefinitely placed in a state hospital for violent offences. The civil commitment placement context relates to the nature of the acquittee's crime, his mental disorder, whether they can provide for their own needs, and the least restrictive treatment environment when considering their risk of violence to self and others.

In the State of Ohio, for example, the Ohio Commitment Standard defines the threshold of mental illness as “a substantial disorder of thought, mood, orientation, perception, or memory that grossly impairs:

- Judgment
- Behavior
- Capacity to recognize reality
- Ability to meet the ordinary demands of life

The other consideration is that mental illness causes: 1) Substantial risk of physical harm to self; 2) Substantial risk of physical harm to others; 3) Unable to provide for needs and hospitalization as least restrictive placement; 4) Benefit from hospitalization and infringement on rights of self/ others. If the insanity acquittee is civilly committed to a psychiatric hospital in the State of Ohio,

then they can progress through five levels of movement including: Level one – restricted unit; level two – supervised on grounds; level three – unsupervised on grounds for programs and is able to work and given free time; level four – supervised off grounds; level 5 – unsupervised off grounds.

Typically, the state hospital forensic examiners will conduct violence risk assessments which often include treatment team meetings working with hospital mental health professionals and the patient, as well as family members, and utilization of violence risk assessment instruments such as the START (Webster, Nicholls, Martin, Desmarais, & Brink, 2006) and the HCR-20-V3 (Douglas, Hart, Webster, & Belfrage, 2013). When an insanity acquittee is ready for conditional release into the community, they will have conditions similar to probation or parole, and conditional release can be revoked if the conditions are violated. Conditional release conditions typically include compliance with medications and treatment, abstinence of use of alcohol and drugs, consideration of appropriate living arrangements, and prohibition of weapons for example.

15.5. Neuroscience and Criminal Responsibility

In recent years, there has been an advent in the application of the field of neuroscience to criminal law and defence. Advances in neuroscience, such as brain scanning and neuroimaging (see Chapter 3) have been utilized in criminal court proceedings, but notably, mostly for mitigation consideration. Yet, some of these neuroimaging applications can also be considered in criminal responsibility (Batts, 2009). Legal commenters Gaudet and Marchant (2016) note there is a gap between the abnormality shown in the neuroimaging data and the legal concepts related to the mental state of the defendant that is at issue in criminal trials such as criminal responsibility and culpability. Neuroimaging data may be related to findings of moral action and self-control, especially related to the structure and function of the prefrontal cortex, and ultimately it may be relevant to determining legal insanity (Batts, 2009). Similarly, when there are irresistible impulse and volitional tests for insanity, such as the ALI Standard, neuroscience may also be able to provide data as to the defendant's capacity or incapacity to control their conduct at the time of their offence (Penney, 2012).

The use of neuroimaging similar to psychological and neuropsychological testing can reveal evidence supporting or refuting a particular psychiatric diagnosis, though it is more difficult to apply that evidence as to whether the defendant knew right from wrong, for example. No matter what type of neuroscientific data examining structure and/or function of the brain or assessing psychiatric symptoms, the defendant must be interviewed by a forensic mental health professional. Neuroscience data may be considered more relevant to the presence of a psychiatric or neurological disorder than assessing whether a defendant knew right from wrong or was unable to control their conduct to the requirements of the law.

Typically, a neuroscientist can review brain scan data and describe the volume, structure, and/or damage of a particular brain region, as well as to the function of that brain region, which could be in part relevant to the issues of wrongfulness and impulsivity. For example, we know the functions of the orbitofrontal cortex include emotional processing and decision making (Bechara, Damasio, Damasio, 2000), and if there is structural damage and/or neuropsychological testing results that may be related to functional impairments in this area of the brain, this data may be extrapolated through expert testimony as to a defendant's deficits in emotional control and decision making processes at the time of the instant offence pertinent to an insanity defence.

In a study assessing the impact of neuroimaging evidence in a *mens rea* defence, Schweitzer and colleagues (2011) utilized a nationally represented sample of 1476 jury eligible participants who evaluated summaries of criminal cases, in which expert testimony was presented to support a mental disorder as exculpatory evidence. The authors found no evidence that neuroimaging data affected juror's judgments (verdicts, sentence recommendations, judgments of the defendant's culpability) over and above neuroscience relevant testimony. Yet, the authors found that neuroscientific evidence was more effective than clinical psychological evidence in persuading jurors that the defendant's mental disorder reduced the capacity to control his actions, although this evidence did not result into differences in verdicts.

Ultimately, neuroscience evidence through neuropsychological testing and assessment as well as neuroimaging data, especially as related to particular areas of the brain, such as the frontal and temporal lobes, and to particular brain functioning including executive functioning, can be useful

at both guilt innocence and mitigation sentencing phases of criminal trials. Executive functioning neuroimaging and neuropsychological assessment data especially related to a defendant's emotional functioning, decision making, mental flexibility, problem solving, and impulse control may be very valuable in insanity trials, especially when the neuroscience data specifically addresses the legal standards of insanity, such as knowing right from wrong and/or controlling one's behavior (Mayen, 2013). Despite a brain scan revealing clear abnormality of the brain, it may be unclear how that abnormality may have affected the defendant at the time of their offence, and to what extent the defendant experienced violent impulses or could not voluntarily control those impulses. A forensic neuropsychologist who evaluates the defendant's psychological and neuropsychological functioning can assist with making this link especially between brain behavior relationships, neurocognitive functioning, psychiatric symptoms, and violent conduct.

Clinical forensic evaluation of a client is necessary to determine how a client's cognitive abilities and/or mental illness may relate to the legal questions at hand. Importantly, this author practices as a forensic psychologist and forensic neuropsychologist, and the practice of neuropsychology addresses brain behavior relationships and neuropsychological tests assess different areas of brain function, such as memory, executive functioning, attention, language, and visuospatial and perceptual reasoning for example. Along those lines, executive functioning data pertaining to reasoning, impulse control, judgment, and planning may be relevant to the cognitive element of the insanity defence. Despite a neuropsychologist conducting neuropsychological assessment months or even years after the instant offence, impairment in neurocognitive functioning in the defendant may be related to the defendant's cognitive functioning at the time of the offence and may also be pertinent to whether the defendant knew right from wrong ample.

15.6. Conclusions

As can be gleaned from this chapter, the not guilty by reason of insanity and criminal responsibility defence has a long history internationally and allows for mentally ill defendants to obtain treatment instead of punishment. In the USA, perhaps the most widely publicized insanity case was that of John Hinckley, who attempted to assassinate President Ronald Reagan based on a delusional belief system. In essence, while he knew right from wrong, Hinckley was unable to

conform his behavior to the requirements of the law. Due to public outrage, most states altered their insanity statutes and focused on a much narrower view of human criminal behavior pertinent to the defendant's knowledge of right from wrong rather than their ability to control their behaviors. This author believes that this narrow definition unfortunately limits the aetiology and causation of one's overall emotional, affective, cognitive, and behavioral functioning. Human behavior is not limited to only knowledge of a consequence, but includes decision making, problem solving, emotional processing, and behavioral and emotional regulation for example.

The criminal responsibility evaluation pertains to a retrospective evaluation in which the forensic mental health professional evaluates the defendant's previous mental state with the focus of examining psychiatric and neuropsychiatric symptoms and their relationship to their criminal conduct. Often the most difficult task is to examine the defendant's perception of the wrongfulness of their conduct. It is imperative for the forensic mental health professional to take the role of the detective and review collateral information such as records and interviews, and the defendant's confession to get a picture of this retrospective mental state. The advent of neuropsychological assessment and neuroimaging to criminal responsibility and insanity cases also may add valuable information in assessing brain/behavior relationships and essentially the structure and function of the brain and how it relates to the defendant's criminal behavior.

15.7. SUMMARY

- The insanity defence is a well-recognized legal doctrine allowing a mentally disordered criminal offender to receive treatment instead of punishment as a mentally ill person cannot be deterred through punishment
- The insanity defence typically addresses the defendant's knowledge of wrongfulness at the time of their offence while diminished capacity focuses on the defendant's ability to form the *mens rea* and requisite criminal intent outlined for each charge
- The law in some jurisdictions allows a defendant to present mental state evidence in cases of self-defence

- In addition to interviewing the defendant, the forensic expert witness should consider interviewing collateral informants and reviewing collateral records to best determine a defendant's past mental state
- After a defendant is found legally insane, forensic experts will have to examine the defendant as to risk of violence to self and others regarding the least restrictive placement environment.
- Neuroscience evidence and experts can be utilized when examining a defendant for past mental state and mitigation evidence.

ESSAY /DISCUSSION QUESTIONS

- How can neuroscience evidence be utilized and improved to assist the trier of fact in understanding a defendant's past mental states at the time of a crime?
- What are the complexities when determining whether a defendant knew the wrongfulness of past criminal behaviour?
- If given the authority, how would you define the insanity defence?
- What other legal procedures would be beneficial for the criminal justice system when considering the best interests of the mentally ill offender and protection of society?

ANNOTATED READING LIST

Eastman, N., and Campbell, C. (2006). Neuroscience and legal determination of criminal responsibility. *Nature Reviews Neuroscience*, 7(4):311-8. <https://doi:10.1038/nrn1887>

This influential review which examines the link between recent findings in neuroscience and violent behaviour and considers their implications for the courts regarding criminal responsibility and sentencing policy

Kalis A., and Meynen G. (2014). Mental disorder and legal responsibility: the relevance of stages of decision making *International Journal of Law and Psychiatry*, 37(6):601-8.

[https://doi: 10.1016/j.ijlp.2014.02.034](https://doi:10.1016/j.ijlp.2014.02.034)

Discusses the relevance of decision-making models for evaluating the impact of mental disorder on legal responsibility and proposes a three-stage model of decision making in terms of behavioural control.

Janofsky, J. S., Hanson, A., Candilis, P. J., Myers, W. C., Zonana, H., Irving, B., Giorgi-Guarnieri, D., Janofsky, J., Keram, E., Lawsky, S., Merideth, P., Mossman, D., Schwartz-Watts, D., Scott, C., Thompson, J., and Zonana, H. (2014). AAPL practice guideline for forensic psychiatric evaluation of defendants raising the insanity defence. *Journal of the American Academy of Psychiatry and the Law*, 42, S3-S76.

<https://doi:10.4103/0019-5545.196832>

A major review of legal and psychiatric factors affecting of competence to stand trial, designed to give practical guidance and assistance to the US courts, with practice guidelines endorsed by the American Academy of Psychiatry and the Law.

Knoll, J. L., & Resnick, P. J. (2008). Insanity defence evaluations: Toward a model for evidence-based practice. *Brief Treatment and Crisis Intervention*, 8, 92–110.

<https://doi.org/10.1093/brief-treatment/mhm024>

Pioneering attempt to create a model of evidence-based insanity evaluation, using broadly accepted objectives for forensic psychiatrists conducting evaluations to generate guidelines for an evidence-based sanity evaluation system for the US courts.

REFERENCES

American Law Institute (1985). *Model penal code and annotations*. Washington, DC: American Law Institute

Bechara, A., Damasio, H., & Damasio, A.R. (2000). Emotion, decision making and the orbitofrontal cortex. *Cerebral cortex*, 10 3, 295-307 .

<https://doi.org/10.1093/cercor/10.3.295>.

Blunt, L.W. & Stock, H. (1985). Guilty but mentally ill: An alternative verdict. *Behavioral Sciences and the Law*. 8, 49-67.

<https://doi.org/10.1002/BSL.2370030105>

McGraw, B.D., Farthing-Capowich, D & Keilitz, I. (1985). The guilty but mentally ill plea and verdict: Current state of the knowledge. *Villanova Law Review*, 30, 117-190 <https://digitalcommons.law.villanova.edu/vlr/vol30/iss1/3>

Callahan, L.A., Steadman, H.J., McGreevy, M.A., & Robbins, P.C. (1991). The volume and characteristics of insanity defense pleas: an eight-state study. *The Bulletin of the American Academy of Psychiatry and the Law*, 19(4), 331-8.

Clark v. Arizona, 548 US 735 (2006).

Douglas, K.S., Hart, S.D., Webster, C.D., & Belfrage, H. (2013). *HCR-20V3: Assessing risk of violence – User guide*. Burnaby, Canada: Mental Health, Law, and Policy Institute, Simon Fraser University.

Dusky v. United States, 362 U.S. 402 (1960).

Federal Rule of Evidence 704. <https://www.rulesofevidence.org/article-vii/rule-704/>

Frey, R.G. (1983). Guilty but mentally ill verdict and due process. *Yale Law Journal*, 92(3), 475-498.

Gaudet, L. M., & Marchant, G. E. (in press). Under the radar: Neuroimaging evidence in the criminal courtroom. *Drake Law Review*, <https://ssrn.com/abstract=2838996>

Gawon Go, Amnesia and criminal responsibility (2017) *Journal of Law and the Biosciences*, 4(1) 194–204, <https://doi.org/10.1093/jlb/lxx003>

Goldstein, A. M., Morse, S. J., & Packer, I. K. (2013). Evaluation of criminal responsibility. In R. K. Otto & I. B. Weiner (Eds.), *Handbook of psychology: Forensic psychology* (pp. 440–472). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118133880.hop211019>

Kois, L.E.& Chauhan, P. (2018). Criminal responsibility: Meta-analysis and study space. *Behavioral Sciences & the Law*, 36(3), 276-302.
<https://onlinelibrary.wiley.com/doi/10.1002/bsl.2343>

Kahler v. Kansas, 140 S. Ct. 1021, 1027 (2020).

Lehrer, D. S., & Lorenz, J. (2014). Anosognosia in schizophrenia: hidden in plain sight. *Innovations in clinical neuroscience*, 11(5-6), 10–17.
[Anosognosia in schizophrenia: hidden in plain sight - PubMed \(nih.gov\)](#)

McDonald v. United States, 312F.2d 347 (1962).

Melville, J. D., & Naimark, D. (2002). Punishing the insane: The verdict of guilty but mentally ill. *Journal of the American Academy of Psychiatry and the Law*, 30(4), 553–555.

Meynen G. (2013). A neurolaw perspective on psychiatric assessments of criminal responsibility: Decision-making, mental disorder, and the brain. *International journal of law and psychiatry*, 36(2), 93–99. <https://doi.org/10.1016/j.ijlp.2013.01.001>

M’Naghten’s Case [1843] All ER Rep 229

Erratum in: *Behav Sci Law*. 2019 Jul;37(4):468. PMID: 27061306.

Norko, M. A., Wasser, T., Magro, H., Leavitt-Smith, E., Morton, F. J., & Hollis, T. (2016). Assessing insanity acquittee recidivism in Connecticut. *Behavioral Sciences & the Law*, 34(2-3), 423–443. <https://doi.org/10.1002/bsl.2222>

ORC § 5122.01 Hospitalization of Mentally Ill Definitions.

Penney S. (2012). Impulse control and criminal responsibility: lessons from neuroscience. *International Journal of Law and Psychiatry*, 35(2), 99-103.

<https://doi.org/10.1016/j.ijlp.2011.12.004>

Perlin, Michael L. (2009). “His brain has been mismanaged with great skill”: How will jurors respond to neuroimaging testimony in insanity defence cases? *Akron Law Review*, 42, 885-887.

Platt, A., Diamond, B. (1966). The origins of the right and wrong test of criminal responsibility and its subsequent development in the United States: An historical survey,” *California Law Review* 54(3),1227-1260

R v. Byrne, 2 QB 396. (1960)

R v M’Naghten (1843) 8 E.R. 718; 1843 10 Cl. & F. 200

Rabkin, J. G. (1979). Criminal behavior of discharged mental patients: A critical appraisal of the research. *Psychological Bulletin*, 86(1), 1–27. <https://doi.org/10.1037/0033-2909.86.1.1>

Rex v. Arnold, 16 How. St. Tr. 695 (1724)

Reg. v. Oxford, 9 Car.& P. 525, 173 Eng. Rep. 941 (1840).

Roberts, C. F., Golding, S. L., & Fincham, F. D. (1987). Implicit theories of criminal responsibility: Decision making and the insanity defense. *Law and Human Behavior*, 11(3), 207–232. <https://doi.org/10.1007/BF01044643>

Schabas, W. (2012). Mens rea, actus reus, and the role of the state. ICLR.

doi: [10.1093/acprof:oso/9780199653072.003.0006](https://doi.org/10.1093/acprof:oso/9780199653072.003.0006)

Schweitzer, N.J. Saks, M.J., Murphy, E.R., Roskies, A.L., Sinnott-Armstrong, W., & Gaudet, L.M. (2011). Neuroimages as evidence in a mens rea defence: No impact. *Psychology, Public Policy, and Law*, 17(3), 357–393. <https://doi.org/10.1037/a0023581>

State v. Griffin, 100 Wn.2d 417, 670 P.2d 265 (1983).

State v. Mott, 187 Ariz. 536 931 P.2D. 1046.

State v. Phipps, 883 S.W.2d 138, 143 (Tenn. Crim App. 1994).

State v. Thomas, 123 Wn.App. 771, 779, 98 P.3d 1258 (2004).

State v. Walker, 136 Wn.2d 767, 772, 966 P.2d 883 (1998).

§ 8.01. Insanity. Acts 1973, 63rd Leg., p. 883, ch. 399, Sec. 1, eff. Jan. 1, 1974. Amended by Acts 1983, 68th Leg., p. 2640, ch. 454, Sec. 1, eff. Aug. 29, 1983; Acts 1993, 73rd Leg., ch. 900, Sec. 1.01, eff. Sept 1, 1994.

United Kingdom House of Lords Decisions. (May 26, June 19, 1843). “Daniel M’Naghten’s Case.” *British and Irish Legal Information Institute*.

Webster, C. D., Nicholls, T. L., Martin, M. L., Desmarais, S. L., & Brink, J. (2006). Short-term Assessment of Risk and Treatability (START): The case for a new structured professional judgment scheme. *Behavioral Sciences & the Law*, 24(6), 747–766. <https://doi.org/10.1002/bsl.737>

Winkel, Susan. (2013). Free fill, responsibility and forensic psychiatry: An exploration of justifications for the insanity defence. *GGzet Wetenschappelijk*, 17(1) 36- 44.