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Neuroscience on the Scene of the Crime

Item Type	Article
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Citation	Syed, Mariyam (2024). Neuroscience on the Scene of the Crime (editors: Cassandra Rosales & Rayna Swafford, art by Teddy Jakim). Grey Matters 2, 12-15. Georgia State University. https://doi.org/10.57709/393j-4c78
DOI	https://doi.org/10.57709/393j-4c78
Download date	2026-03-08 20:51:42
Link to Item	https://hdl.handle.net/20.500.14694/15949

A stylized illustration of a brain in shades of orange and red. A hand with red fingers holds a wooden beam across the top of the brain. The background is a mix of green and yellow brushstrokes. The text is overlaid on a yellow horizontal band.

FEATURE

Neuroscience on THE SCENE OF THE CRIME!

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Historically, neuropsychology was defined by Meier as “the scientific study of brain-behavior relationships,” which provides the foundation for its forensic applications. Horton and Hartlage further refined forensic neuropsychology as “the application of the science of brain-behavior relationships to legal decision-making” [1, 4]. Forensic neuropsychology plays a crucial role in bridging the gap between neuroscience, psychology, and the legal system, offering significant benefits to the mental health discipline and society at large. As the field continues to professionalize, neuropsychologists practicing in legal contexts have had to build upon their existing clinical expertise. They must possess a deep understanding of brain-behavior relationships, while also acquiring expertise in legal procedures to successfully meet the unique demands and challenges of forensic practice [10].

In essence, forensic neuropsychology is a specialized branch of neuropsychology that applies the understanding of brain-behavior relationships to legal matters. This interdisciplinary field leverages clinical neuropsychological principles to navigate complex legal issues that involve cognitive, emotional, and behavioral functioning in convicts. Significant advances in research and clinical practice have enabled clinical neuropsychology, and its related subfields, to make significant strides. These developments have, in turn, helped pave the way for many forensic applications. As criminal investigations and scientific research continue to expand on principles in applied neuropsychology, the demand for expert testimonies from

neuropsychologists in legal settings has grown exponentially [3].

“Forensic neuropsychologists play a crucial role at the intersection of psychology and law.”

To understand their impact on criminal procedures, it’s essential to explore various roles and responsibilities that forensic neuropsychologists must fulfill in legal settings. In such spaces, attorneys seek out neuropsychologists to enlist their expertise in evaluating and assessing the competency of individuals standing trial. Their evaluations and related testimonies are largely accepted within our legal systems to provide insight into defendants’ pre-existing cognitive impairments or psychological conditions [5]. In some jurisdictions, neuropsychologists are also asked to give opinions about the potential causes of such cognitive impairments, further influencing legal outcomes [13]. Forensic assessments also assist in determining whether such psychological conditions contributed to their criminal actions. Although this specialized knowledge allows neuropsychologists to provide valuable insights to the courts, it also places them in ethically challenging positions. Neuropsychologists who find this level of responsibility uncomfortable may find forensic work challenging, as it requires maintaining neutrality even when the potential for harm is high [18].

Clinical neuropsychology is a specialized field that bridges neuroscience and psychology, focusing on the practical applications of brain-behavior relationships in clinical settings. Forensic neuropsychology differs from clinical neuropsychology, particularly in criminal cases

and within the forensic context. While clinical neuropsychologists seek to assess, diagnose, and treat mentally ill individuals, forensic neuropsychologists aim to determine whether an individual’s psychological state meets a specific legal standard. Tasked with applying their knowledge of brain-behavior relationships, forensic neuropsychologists maintain a unique and vital role in both civil and criminal legal proceedings [6]. Their forensic evaluations center around examining the psychological aspects of a given case and using their findings to inform legal decision-making.

One of the most striking differences between clinical and forensic neuropsychology is the role and ethical stance that neuropsychologists must adopt in a forensic setting. In clinical settings, the goal is to alleviate suffering and improve an individual’s quality of life. Conversely, forensic neuropsychologists must adopt a neutral, unbiased position as “seekers of truth” [17]. This objectivity is essential in legal cases, where their evaluations may have significant consequences, such as determining competence in capital cases. In such cases, the evaluator’s opinion greatly influences the court’s decision to either refrain from or proceed with sentencing a defendant to execution. Evaluations are often complex in nature since they must address both legal and psychological aspects of a given case. Malingering, or intentionally faking symptoms, is a frequent issue in both civil and criminal cases [12]. Individuals seeking compensation for work-related injuries may exaggerate symptoms, while criminal defendants may feign cognitive impairments or psychosis to avoid sentencing or execution. Forensic



neuropsychologists must therefore remain vigilant for dishonest responses and thoroughly skilled at detecting deception.

Forensic neuropsychologists play a crucial role at the intersection of psychology and law, offering specialized knowledge to help the courts determine and assess the psychological state of defendants. Their role differs significantly from

that of clinical neuropsychologists, requiring a neutral and objective stance, especially in criminal cases where the consequences of their evaluations can be severe [8]. Their insights help courts understand how various psychosocial variables influence brain function and dysfunction. This type of expertise is vital in both criminal and civil proceedings, where neuropsychologists may be asked to

provide evaluations on matters such as an individual's competency to stand trial, capacity to make medical decisions, or the potential danger an individual may pose to themselves or others [10]. While their work is essential in assisting with legal decisions, it also presents significant ethical challenges, particularly in cases involving competency or capital punishment. As a result, forensic neuropsychologists must balance their responsibility as truth-seekers with the potential consequences of their assessments [8].

Forensic neuropsychologists perform their evaluations in various settings, including clinical offices, nursing homes, hospitals, and private residences. For civil cases, most evaluations occur in the practitioner's office, but depending on the context, other facilities, such as nursing homes or hospitals, may be involved. In criminal cases, out-of-custody defendants may also be evaluated in clinical offices, only if appropriate safety measures are in place.

Essentially, forensic neuropsychology serves as a critical link between mental health, neuroscience, and the legal system. This discipline is especially critical in informing legal decisions and providing valuable insights to improve mental health treatment, enhance public safety, and design effective rehabilitative services for offenders [15]. As society continues to recognize the complex interplay between mental health and criminal behavior, forensic neuropsychology will undoubtedly contribute to shaping a more ethical and compassionate approach to offenders with mental health conditions.

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