THE NEUROBIOLOGY OF THE STATUTORY CRIMINAL DEFENCE OF IMMATURE AGE*

Abstract:
It is common knowledge that whenever a defendant who is standing criminal trial is found guilty of an offence, his constitutionally guaranteed liberty is severely curtailed or his life abruptly taken by the State. Due to its harshness and seemingly draconian principles associated with criminal jurisprudence, certain special mitigating circumstances are provided by statutes to serve as shields. One of such unique circumstances is the statutory criminal defence of immature age. Whenever it is successfully raised and defended it amounts to a solemn justification for the specific offence. The above explanation prominently results to either an outright exculpation from criminal liability or the punishment drastically reduced to the barest minimum. It is therefore, the intendment of this scholarly investigation to critically examine the philosophical root, the raison d'etre of including the defence of immature age as a statutory criminal defence. This is specifically aimed at ascertaining whether the defence of immature age as provided by law is neurologically oriented. In other words, the work is beamed to answer the question why the defence of immature age in criminal jurisprudence? The methodological approach adopted to analyse the selected indices is doctrinal, using primary and secondary sources of information as styles of data collection.

Keywords: Neurobiology, statutory, criminal defence, immature age.

1. Introduction:

The essence of having statutory and common law criminal defences is to either mitigate punishment or to secure outright acquittal or exoneration of the defendant from being criminally responsible.[1] Defences in criminal jurisprudence are mechanisms entrenched principally in statutes to further strengthen the realization of the actual and real determination of the mental state of the defendant as at the time of commission of the offence. They are statutory shields at the disposal of the defendant, once they are raised and are successfully defended, the defendant may be either absolved from criminal responsibility or punishment drastically mitigated to the barest minimum. This underpins the settled principle, that the law punishes the guilty mind, to wit, the *mens rea* and not necessarily the guilty act, to wit, the *actus reus*. By this, an act might be perpetrated and proven as required by law, yet the defendant could go unpunished in the absence of guilty mind. The above underscores the prominence of statutory defences in all criminal proceedings.

The potency of statutory criminal defences in the course of proceedings is further reiterated by the settled principle of law that the trial court is at liberty to raise any available defence on its own volition and rely thereon. Provided the defence is supported by the evidence adduced before the trial court. This can be meaningfully carried out even if the defendant inadvertently omitted to raise any possible criminal defence. This well settled principle of law in criminal jurisprudence is expounded by the highest in the pedigree of courts in Nigeria, in the case of *Orubo vs The State*,[2] where *Abba Aji, JSC.*, held thus:

> An accused person is entitled to raise any defence available to him at the trial, and the court is bound to consider same. In fact, even where he did not raise it, he can benefit from it, if it is available in his case. The settled principle of law is that if, from the totality of evidence, a particular defence avails an accused person in a criminal matter, he should be given the benefit of that defence notwithstanding the fact that he did not specifically raise it.[3]

The legal implications of statutory criminal defences are rather very simple, which is an outright expression of acknowledgement of guilt by the defendant. This is on the premise that the defendant committed the offence, but under some exculpatory influences beyond the control of the defendant which are allowed by law. These influences in certain circumstances, if not all, could deprived the defendant from having the inert capacity to make rational decisions, control of bioelectrical impulses, loss of moral judgement, and complete loss of environment consciousness and reality. The above expatiation simply implies that a defendant who rescinds the commission of

***By O. I. DERIK-FERDINAND, PhD, LLM, LLB, BL, ACI Arb**; A Legal Practitioner and Chartered Arbitrator, Egele & Egele Attorneys-at-Law, (Daniel Chambers) 24 INEC Road Kpansia-Epie, Yenagoa, Bayelsa State of Nigeria; and Lecturer, Department of Legal Studies, Bayelsa State Polytechnics Aleibiri P.M.B 168, Ekeremor, Bayelsa State. derik.ferdinand@gmail.com, 08068436045; and
***E O. C. OBIDIMMA, BA (Philosophy), PhD, LLM, LLB, BL**, Professor of Law, Faculty of Law, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria; eocobidimma@gmail.com, 0809 025 5555, 0803 400 3436.

[1] O I Derik-Ferdinand, Lectures Monogram on Criminal Law II, Unpublished work, Bayelsa State Polytechnic Aleibiri, P.M.B 168 Yenagoa, Bayelsa State, 2018.
[2] [2021] 16 NWLR (Part 1803) 549 SC; [586, paras. E-F].
[3] *Edoho v The State* [2010] 14 NWLR (Part 1214) 651 SC.

the offence is not legally entitled to raise and defend any of the special criminal defences provided by law. This is knitted upon the sound principle of law that statutory defences are only available for those who have acknowledged the *actus reus* of the offence. The well settled principle of law is espoused by the echelon in the hierarchical order of courts in Nigeria, in *Posu v The State*[4] where the law lord of great fecundity, per *Eko, JSC.*, expounded the principle as follows:

> The appellant in his testimony did not plead any of the special defences, to wit, self-defence or provocation. That of course entails his admitting, the *actus reus*. The plea of any of the two special defences effectively renounces or negates the necessary criminal mental element or *mens rea* to complete the offence. These special defences, being pleas of justification or for mitigation of sentence avail only the accused person [defendant] who had admitted the *actus reus*. The appellant had thus, in his oral testimony, abandoned any of special statutory defences and the available evidence did suggest any.

These statutory escape routes are allowed by law to simply underscore the significance of the mental element *(mens rea)* over and above the physical element *(actus reus)* in the assessment and evaluation of criminal acts and omissions. In the advance technologies of the world, the neurological technologies of deep brain stimulation (DBS), brain electrical oscillations signature profiling (BEOSP), and brain electrical activation profiling (BEAP) are used by experts to determine the brain functional capacity as at the time when the offence was committed by the defendant. The *mens rea* of an offence is neurologically oriented in all ramifications. This is because there can rarely be mental assessment and evaluation of an act or omission without brain activation of the subject. Without analysing the brain functionality, *mens rea* cannot be determined. Hence, the basis of *mens rea* is the brain functionalty.

2. BEOSP and Determination of *Mens Rea*

A remarkable breakthrough in neuroscientific and technological evidence in India, is design and development of brain electrical oscillation signature profiling (BEOSP) [5] in 2003. The BEOSP, is a neurological technology used in profiling the veracity of evidence and memory of witnesses during criminal proceedings and police investigation.[6] The device work with experimental knowledge (EK) and never on acquired knowledge (AK).[7] The former is what the defendant had participated in doing, that is, actual experience and involvement. Whilst the latter is what the defendant might have heard from others or see others do. Specifically, the BEOSP functions as an electronic device in the form of a protective cap like an helmet with thirty two hyper censors. The device is connected into a monitor or screen. When the equipment is applied on the head of a defendant, the censors interact with the person's brain profiling in an oscillating manner as in a modulating frequency sequence. Like that of a radio waves or the dial of a speedometer in a car. The frequency modulating wave length concentrates heavy flow of blood to the part of the brain responsible for that particular criminal act or omission. The court, the prosecution, the defence and the defendant would watch the modulating frequency as it traverses on the screen round the brain circuitry systems. If there is no concentration of the wave lengths in a particular portion of the brain, then the defendant is not responsible for the alleged act or the omission. The learned authors summed up their insightful scholarship with the following phraseologies: [8]

> Neurolaw is based on the scientific principles of medical science, neuroscience, psychiatry, psychology, etc. It is why results are very much accurate and one may justify the findings of brain mapping, and could be easily proved in the court room. There is a good thing that by studying the human brain we could provide treatment to many patients who are facing brain diseases and distress problems. The second good thing is, we can predict happening of a future event and could stop that event. … Now with the growth of literature in neuroscience, this advance field of studies can be benefited to mankind by proving better technological support in terms of evidentiary value so that justice could once again triumph over injustice.[9]

[4] [2021]4 NWLR (Part 1767) 434 SC; [451, paras. F-G] per, Eko., JSC.

[5]S S Dash, 'Expanding Frontiers of Neurolaw: Post Smt. *Selvi v The State of Karnataka'* [2020] (7) (19) *Journal of Critical Reviews.*

[6]A Verma, and others 'A Review of Neurolaw and its Contributions to the Judiciary' [2020] (9) (2) *International Journal of Scientific & Technology*.

[7] *Ibidem*.

[8]A Verma; A B Kafaltiya; D D Singh; and others, 'A Review of Neurolaw and its Contributions to the Judiciary' [2020] (9) (2) *International Journal of Scientific & Technology Research,* 466- 471.

[9]S S Dash, 'Expanding Frontiers of Neurolaw: Post Smt. *Selvi v The State of Karnataka'* [2020] (7) (19) *Journal of Critical Reviews.*

The technology is being used in courts in Mumbai, Chandigarh and Gandhinagar.[10] This neurological device of BEOSP and fMRI[11] were adopted by the Supreme Court of India[12] in the case, *State of Maharashtra vs Shama*,[13]where the court utilized the technology to acquit the respondent. Beside this technology, there is another one referred to as brain electrical activation profiling (BEAP). It is a neurological technology used in detecting whether a defendant is familiar with certain information by means of measuring event-related potential (ERP) by the brain after it has absorbed an external event. The BEAP is also called P-300 Waves test.[14] The correlation between BEOSP, BEAP and defence of immature age (DOIA) is that, BEOSP, BEAP and DOIA are all aimed at ascertaining the mental state, *mens rea* of the defendant at the time of commission of the offence. *Mens rea* is the analytical evaluation of the operational functionality of the brain circuitry system as at the time of commission of the offence. Neuroscience, studies the composition, structures and functions of the brain. *Mens rea* is brain analysis; therefore, the quantification of *mens rea* of an offence is exclusively neuroscientific. Hence, BEOSP, BEAP and DOIA have their roots knitted upon neuroscience. Specifically, in the development of young people, to wit, children, certain parts of the brain, especially those responsible for moral judgement and rational thinking (the prefrontal cortical area of the limbic systems) are yet to be fully developed and as such cannot be functional.[15] Therefore, a young person whose brain is very immature is incapable of forming the required criminal element to commit an offence.

3. Immature Age and Assessment of *Mens Rea:*

Criminal defences are judicial tools in the assessment and evaluation of the mental elements of an offence in order to ascertain vividly if the defendant was at the right frame of mind as at the time the offence was committed. This is in consideration of the view that both reflex and voluntary actions of man are generated by the brain circuitry systems, hence, the inevitability of utilizing the brain science, to wit, neuroscience in the determination of *mens rea* of an offence. Neuroscience is responsible for the establishment of positive link in the existence of *mens rea*, the required criminal mental element in the commission of any offence, which is sine-qua-non for any criminal conviction. The scientific inclination of *mens rea* and the neuroscientific correlates of the brain and law will make criminal justice delivery more effective, transparent and fairer. It is the intended anticipation of neurolaw and *mens rea* to germinate a more enduring and robust criminal justice administration in contemporary times. Hence, neuroscientific achievements could radically change the pre-existing legal norms, processes and customs.[16]

Flowing therein above, determination of criminal liability is solely a product of internal mental acumen of the defendant. it is therefore connected with neural functionality and operations of the brain circuitry systems. Having demonstrated to be related with the functions and operations of the brain, it then follows that, criminal defences are purely neuroscientific in all ramifications. As it has been shown in this scholarly investigation that mental elements of offences are by their very nature and character neurological, and that criminal defences have strong nexus with mental activation and stimulation of the brain. It is therefore the intendment of this scholarly investigation to demonstrate and illustrate how the statutory defence of immature age as it entails in criminal jurisprudence is the direct outflow of neuroscience and the environment.

It is worthy to reiterate herein as a caveat that in the course of illustration using the criminal defence of immature age, emphasis shall be made principally on the neurological correlate of the defence and the functions of the brain. In relation to the above limitation, there shall be deliberate effort to deemphasise the judicial nitty-gritty in the sequential process of raising and defending the special defence. Also to be less emphasize are the condition precedents and judicial modalities of sustaining such defence whenever it is raised in the course of proceeding. The vital point of emphasis hereto is that such criminal defence is statutorily known in Nigeria. It part of the body of laws in contemporary criminal jurisprudence in Nigeria and it appears to be neurologically inclined in its operational foundation. The defence under consideration to be addressed neurologically has been in the corpus of our criminal laws since the promulgation of the Criminal Ordinance in 1904.

---

[10]S S Dash, 'Expanding Frontiers of Neurolaw: Post Smt. *Selvi v The State of Karnataka'* [2020] (7) (19) *Journal of Critical Reviews.*

[11] Functional magnetic resonance imaging.

[12] *Op-cit*.

[13] No. 508/07 (Court) of Sessions June 12, 2008.

[14]Smt. *Selvi v State of Karnataka,* (Court of Sessions, 2000) indiankanoon.org; available from http//indiankanoon.org/doc/338008.

[15]O R Goodenough, 'Mapping Cortical Areas Associated with Legal Reasoning and Moral Intuition' [2001] (41) (31) *Journal of Jurimetrics*, 429.

[15]R M Sapolsky, 'The Frontal Cortex and the Criminal Justice System' [2004] (3)(5) *Philosophical Transactions of the Royal Society of Britain: Biological Sciences,* 1787.

[16]S S Dash, and others, 'Expanding Frontier of Neurolaw: Post Smt. *Selvi vs State of Karnataka'* [2020] (7) (19) *Journal of Critical Reviews*, 4907.

4. Neurological Foundation of the Criminal Defence of Immature Age:

Neuroscience[17] is no doubt one of the most recent and intriguing domain in the field of science that is constantly interfacing with law and criminal responsibility. This emerging trend is often time referred to as Neurolaw, that is, Neuroscience and Law, prodding the link between the brain and criminal behaviour. This emerging interdisciplinary study, to wit, neuroscience and law seeks to establish a strong relationship between the brain and law as an influence to criminal behaviours. The field of Neurolaw utilizes more accurate and comprehensive tools in measuring legal issues and phenomena. This is done in consideration of the significance of the brain in the processing and interpretation of cognition, formation of reasoning and discernment of moral judgement in humans.[18]

Immature age is one of the statutory criminal defences known in Nigeria's criminal jurisprudence. It is a specie of defence that presupposes that people of certain age brackets are incapable of committing any offence. This criminal defence is statutorily entrenched under Section 30,[19] which provision states thus:

> A person under the age of seven years is not criminally responsible for any act or omission.[20]
>
> A person under the age of twelve years is not criminally responsible for an act or omission, unless it is proved that at the time of doing the act or making the omission, he had capacity to know that he ought not to do the act or make the omission.
>
> A male person under the age of twelve years is presumed to be incapable of having carnal knowledge.[21]

By the provisions of the Act excerpted above, it is the law that a person under the age of seven years can never commit any criminal act or omission. Under the provision of the second paragraph, person within the age of twelve years is not responsible of any criminal act or omission except and unless it has been proved beyond reasonable doubt that the young person knows that he ought not to have perpetrated the act or make the omission. Apropos to the above provisions of the Act, it is further provided under Section 319 (2),[22] as follows: 'Where an offender who in the opinion of the court had not attained the age of seventeen years at the time the offence was committed, has been found guilty of murder, such offender shall not be sentenced to death but shall be ordered to be detained during the pleasure of the President'.

The above excerpted provisions of the Act expressly stipulated that persons under the age of seven years are exempted from the webs of criminal law and its draconian principles. Those under the age of seventeen years, even if proved to have committed a capital offence cannot be sentenced to death knowing that death sentence is the maximum punishment for such offences. IIn that unreported caseof *The State v Obuma*,[23] by the cool evening of January 14, 2008 children of under the ages of seven were playing within their neighbourhood in Emago Kugbo. One of them named Francis Obuma said there is a gun in their house. He then went inside and brought out the gun unknowing to them that the gun is real and had ammunition in it. In the course of playing the gun exploded and killed one of the children by named Saiyidu Amadi. Eventually, Francis Obuma and his parents were arrested and detained in the police cell for murder on the 28th day of January 2008. They were subsequently arraigned at the Degema Division of the Rivers State High Court of Justice. After plea, the defence raised an objection in accordance with the Children and Young People Law of Rivers State and under the provisions of paragraph A of Section.30[24] The presiding Judge, Membre, J., in a considered decision delivered on March 4, 2008 based on the extant operational laws in the State discharged and acquitted Francis Obuma on the grounds of immature age.

---

[17]Is the scientific field which studies the structures, compositions, functions and operations of the brain and all associated antecedents to human behavioural conducts?

[18]Dash, S S and others, 'Expanding Frontier of Neurolaw: Post Smt. *Selvi v State of Karnataka'* [2020] (7) (19) *Journal of Critical Reviews*, 4907.

[19] Criminal Code Act.

[20]Section 50 of the Penal Code is the equivalent of section 30 of the Criminal Code, which inter-alia provides thus; 'No act is an offence which is done:-

(a)by a child under seven years of age; or

(b)by a child above seven years of age but under twelve years of age who has not attained sufficient maturity of understanding to judge the nature and consequence of such act.'

[21] *Ibidem*.

[22]Criminal Code Act, CAP C38, Vol.4, Laws of the Federation of Nigeria (LFN) 2004, which section states thus: 'A person under the age of seven years is not criminally responsible for any act or omission.'

[23]Charge No. DHC/184C/2008, Unreported Judgement of the Rivers State High Court of Justice, delivered by Honourable Justice Membre, j., on March 4, 2008.

[24] Criminal Code Law of Rivers State of Nigeria.

In a related development, in *Modupe vs The State*,[25] the appellant was convicted for murder and was sentenced accordingly at the trial court which was affirmed by the penultimate court. On a further appeal to Supreme Court of Nigeria, principally on the sentence and age of the appellant, the apex court considered the provisions of Section 319 (2)[26] and quashed the sentence pronounced by the two lower courts. Reiterating the well settled position of the law that a person who had not attain the age of seventeen years cannot be sentenced to death even if found guilty for a capital offence.

The above judicial illustrations were portrayed minimally to demonstrate the extant contemporary practice and procedure of criminal law and its jurisprudence in Nigeria. Albeit, the focus of this academic scholarship is not on the likelihood of success or failure of the defence, but that the defence is indeed operational in Nigeria's criminal jurisprudence. The factual prodding of this work is not on the assessment of the defence, but on the basis of its existence and the underlying spirit and philosophy behind the inclusion of such defence in the corpus of criminal law in Nigeria. Going by the expository introduction canvassed herein above in this scholarship, the *raison d'etre*[27] and the philosophical foundation for inclusion of such defence in the body of criminal law practice and procedure is not farfetched. It is simply because the brain has developmental stages and possesses maturity incubation period in humans.[28] Particularly, the scientific fields of neuroanatomy and neurophysiology have discovered that the frontal and prefrontal cortical lobes of the cerebral hemisphere which are the seat of cognition, reasoning, decision making, and moral judgement are the very last to fully developed in humans.[29] Streaming from the scientific sequence espoused hereinabove, the legal and anatomic implications are that persons with such undeveloped brain neurons are incapable of acting rationally and to properly control their bioelectrical impulses in a coordinated manner due to the immaturity of the brain,[30] hence, incapable of committing any criminal act or omission until they attain certain age bracket.[31]

To further substantiate the principle of immature brain development during certain ages of human growth and development, and the formation of capacity to control bioelectrical impulses., Vincent,[32] in his scholarly article, the author stated emphatically that the development of human brain is not completed until around the ages of twenty-one (21) to twenty-three (23) years. As a result of immaturity in brain development young people under the aforesaid age brackets lack the capacity to make rational decisions and to control biologically generated electrical impulses until they attain the age of at least twenty-one years.[33] Furthermore, the principle of immature brain development and capacity to control bioelectrical impulses was aptly demonstrated in succinct terms by the United States of America Supreme Court when in 2004, reviewed the lower courts' decisions in *Roper v Simmons*[34] where Christopher Simmons at the age of 17 had robbed and murdered a woman at the city centre. The defendant, Simmons was previously tried and convicted of first-degree murder and was sentenced to death accordingly. Howbeit, a further appeal to the United States of America Supreme Court, the Court held inter-alia that it is unconstitutional to impose the maximum death penalty on an individual who is under the age of 18. The Court reasoned along with the defence submissions that the frontal cortex of the cerebral hemisphere of the brain of adolescents is yet to be fully developed, and therefore incapable of acting rationally and controlling their biologically generated electrical impulses.[35]

[25] [1988] 4 NWLR (Part 87) 130 SC.

[26]Criminal Code Act, CAP C38, Vol.4, Laws of the Federation of Nigeria (LFN) 2004, which states thus: 'Where an offender who in the opinion of the court had not attained the age of seventeen years at the time the offence was committed, has been found guilty of murder, such offender shall not be sentenced to death but shall be ordered to be detained during the pleasure of the President.'

[27]*Raison d'etre* is a maxim meaning the reason for the performance of an act. Or why an act is done.

[28]Dr Omekwe Dakoru Edoghotu, Consultant Neuro Surgeon, Federal Medical Centre Yenagoa, Bayelsa State (An oral interview granted at his office at about 11: 45 hours Greenwich mean time (GMT) on June 12, 2020).

[29] *Ibidem*.

[30]L Klaming and E J Koops, 'Neuroscientific Evidence and Criminal Responsibility in the Netherlands' [2012] (15) (10), *Journal of International Neurolaw, Tilburg University, Netherlands*, 6.

[31] *Ibidem*.

[32]N A Vincent, 'On The Relevance of Neuroscience to Criminal Responsibility' [2010] (10) (7) *Journal of Criminal Law and Philosophy, Macquarie University, New South Wales (NSW) Australia,* 102.

[33]N Gogtay, and others, 'Dynamic Mapping of Human Cortical Development During Childhood' [2004] (101) (21) *Proceedings of the National Academy of Sciences of the United States of America*, 8174; see also O. C. Snead, 'Neuroimaging and Capital Punishment' [2008] (19) (35) *Journal of Law and Biological Sciences*, 63.

[34] 543 US 551. (2005).

[35]P Catley and L Claydon, 'The Use of Neuroscientific Evidence in the Courtroom by those Accused of Criminal Offences in England and Wales' [2015] (3) (5) *Journal of Law and the Biosciences*, 536.

5. Conclusion

From the foregoing analysis, illustrations and explanations hereinabove, it has been established convincingly that the foundational basis of including the defence of immature age in the corpus of criminal law of most civilized nations of the world is the development of the brain. Neuroscience studies specifically the structures, compositions, functions and operations of the brain as affecting human behaviour either positively or negatively. Therefore, the defence of immature age and prohibition of death sentence for persons under the age of eighteen as entrenched in the Criminal Code is neuroscientifically oriented. Being neuroscientific in its nature and character, it then follows that the scientific knowledge developed from the advancements in neuroscientific findings are required in the assessment and evaluation of the defence of immature age whenever it is raised in the course of criminal proceedings. It is further instructive to note that the philosophical basis of including the defence of immature age in the corpus of criminal law and its jurisprudence is simply the growth and development of the brain which occur along age aggregation. Therefore, the raison d'etre of the criminal defence of immature age, particularly for those under the age seven is immaturity of the brain. Due to the immaturity of the brain, those young persons are incapable to conceptualise the required moral judgement and cognition to commit an offence. Hence, a person without the required criminal element for an offence cannot be held culpable.