
POLICY PAPER

BRAIN SCIENCE AND HOW IT AFFECTS CHILDREN ACCUSED OF CRIMES

I. Conceptual Framework

What is the Issue?

Children and adults in the criminal justice system are not there by chance. Many high-quality studies show that major disruptions in psychological development draw children into the criminal justice system and that many children within the justice system have experienced traumatic social and psychological disruptions, referred to as adverse childhood experiences (“ACEs”). It is not surprising that the prevalence of mental illness is very high among children in the justice system and even more so among children deprived of their liberty¹. What is less well known is the degree to which neurological disabilities (also called neuro-disabilities) also affect children into the justice system.

In general, the psychosocial well-being of individuals who come into contact with justice systems, especially children (under-18s), is not sufficiently taken into account in terms of prevention or response. People with neurological disabilities, in particular children (under-18s), are being let down by society every day. The number of people with neurological disabilities is much higher amongst children and adults in the criminal justice system than in the general population. Society simply does not have adequate procedures in place to ensure that children with neurological disabilities do not end up trapped in those systems, despite the fact that a neurological disability represents an increased and significant risk factor for this outcome. A startling number of children convicted of criminal offences have sustained a brain injury in the course of their life- around 30% of them.² Another 32 percent fall into a borderline intellectual disability range (IQ 70 to 79) and a further 14 percent present a possible intellectual disability (IQ under 69).³ This comes on top of significant rates of children who suffered severe emotional trauma during earlier years, referred to as adverse childhood experiences (or ACEs).

There is clearly a need for a different strategy when it comes to keeping children with neuro-disabilities from becoming entangled in the criminal justice system. A significant step forward in this regard would be greater awareness about neuro-disabilities within the group of professionals that come into contact with children in conflict with the law, including judges, magistrates, police officers, lawyers, probation officers, youth workers, in order to improve prevention and response.

¹ Underwood and, Lee A., Washington, Aryssa. (2016). Mental Illness and Juvenile Offenders. *Int J Environ Res Public Health*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4772248/>

² Farrer, T.J., Frost R.B., Hedges, D.W. (2013). Prevalence of traumatic brain injury in juvenile offenders: a meta-analysis. *Journal of Child Neuropsychology*, 19(3) 225 - 234.

³ Indig, D., Vecchiato, C., Haysom, L., Beilby, R., Carter, J., Champion, U., Gaskin, C., Heller, E., Kumar, S., Mamone, N., Muir, P., van den Dolder, P. Whitton, G. (2011) 2009 NSW Young People in Custody Health Survey: Full Report, Sydney: Justice Health and Juvenile System.

This policy brief, which results from a working group formed during the 2018 World Congress on Justice with Children⁴, highlights the importance of integrating an awareness of neuro-disabilities as part of a multi-disciplinary approach to upholding the rights and protecting the well-being of children with neuro-disabilities who come into contact with criminal justice systems. To that end, it provides an overview of relevant international standards, in addition to a review of case law in the United States of America (USA) where strategic litigation has made effective use of emerging evidence on children's brain development, before setting out ten points to guide the actions of policymakers and practitioners in this field. This paper is supported by the Global Initiative on Justice with Children and endorsed by the members of the Child Justice Advocacy group⁵.

What is a neuro-disability?

Neuro-disability describes a group of congenital or acquired long-term conditions that are attributed to impairment of the brain and/or neuromuscular system and creates functional limitations. A specific diagnosis may not be identified but, where there is one, it may include ADHD (Attention Deficit and Hyperactivity Disorder), Autism Spectrum and Traumatic Brain Injury.⁶ Conditions may vary over time, occur alone or in combination, and include a broad range of severity and complexity.

The impact may include difficulties with movement, cognition, hearing and vision, communication, emotion and behaviour, which are also affected by broader social and economic factors.⁷ Other common consequences include poor impulse control, poor social judgement and decreased awareness of a person's emotional state. These conditions have been linked to an increased risk of offending among children and this can make it more difficult for individuals with neuro-disabilities to engage effectively in their judicial proceedings or to benefit from traditional forms of forensic rehabilitation.^{8 9}

The connection between neuro-disabilities and the criminal justice system

The most common neuro-disability in the criminal justice system is traumatic brain injury ("TBI"), which is the leading form of acquired brain injury ("ABI").¹⁰ Typically more than half of people within the criminal justice system (secure facilities) are found to have some form of TBI involving a degree of "knock out"¹¹. The greater (depth and time of) Loss of Consciousness (LoC) the more likely long-term problems are with cognition and behaviour. The majority of those with moderate to severe TBI (more than 20/30 minutes LoC) have persisting personality changes - for example being more irritable or with temper issues. About a third of those with milder injuries have conduct issues and attention problems. Common causes of TBI include road traffic accidents, sports injuries, falls and fights. Brain injury dysfunction in frontal areas has also been linked to violent and criminal behaviour.

Another common neuro-disability is ADHD which research has found clinically diagnosed in 30 percent and 26 percent of the youth and adult prison populations respectively, which are significantly higher rates than the general population¹² and there is substantial co-morbidity with other problems, such as mental health and drug misuse.

⁴ Workshop on Neuroscience research and child justice, with Huw Williams, Centre for Clinical Neuropsychology Research (CCNR), UK; Philip Jaffé, Center for Children's Rights Studies, University of Geneva, Switzerland; Lucy Dawes, independent international child justice and child protection consultant, UK; Shauneen Lambe, Just for Kids Law, UK; Robert G. Schwartz, Beck Chair in Law, Temple University Beasley School of Law, USA; Maria João Leote de Carvalho, Interdisciplinary Centre of Social Science, Portugal.

⁵ Authors are Cédric Foussard-Terre des hommes, Avril Calder-AIMJF, Leo Ratledge-CRIN, Nikhil Roy- Child Rights independent expert UK, Kristen Hope Burchill - Terre des hommes, with the pro bono support of Baker Mc Kenzie. This paper represents one among other positions during the 2018 World Congress on Justice with Children and does not necessarily represent the view of all institutions and members present at that time.

⁶ Williams, H. (2015, March). Children and Young People with Neuro-Disabilities in the Criminal Justice System. Retrieved May 23, 2018

⁷ Morris, C. (2013). Developing a definition of neuro-disability. Retrieved May 23, 2018, from

http://www.pencru.org/media/universityofexeter/medicalschoo/subsites/pencru/Developing_a_definition_of_neurodisability.pdf

⁸ See for example Hughes, N. Williams, W.H, Chitsabean, P. Davies, R. & Mounce, L. (2012). *Nobody made the connections: The prevalence of neurodisability in young people who offend*. London: Office of the Children's Commissioner.

⁹ Williams WH, Chitsabesan P, Fazel S, McMillan T, Hughes N, Parsonage M, Tonks J. [Traumatic brain injury: A potential cause of violent crime?](#) The Lancet Psychiatry 01 Jan 2018

¹⁰ Williams, H. (2015, March). Children and Young People with Neuro-Disabilities in the Criminal Justice System. Retrieved May 23, 2018,

¹¹ See for example Sarapata, M., Herrman, D., Johnson & Aycock, R. (1998). The role of head injury in cognitive functioning, emotional adjustment, and criminal behaviour. *Brain Injury*, 12,821-842.

¹² Ibid.

As these percentages suggest, there is a high correlation between neuro-disabilities and likelihood of committing a criminal offence, which demonstrates that people with neuro-disabilities have not received adequate support at various stages of their lives. Importantly, specialists increasingly suspect that managing neuro-disabilities (e.g., ADHD) can significantly reduce crime, for example by reducing impulsiveness.

II. International Principles and norms which protect children with neurological disabilities

Special protections for the well-being of people with neurological disabilities have long been espoused by international principles and norms. International principles demonstrate overwhelming rejection of harsh penalties for children in conflict with the law. Instead, international principles focus on ensuring that the rights of persons with neurological disabilities are respected. In addition, these principles emphasize that children with neuro-disabilities receive adequate protection for their specific needs and that they are supported to move beyond the criminal justice system.

One of the leading international texts on this matter, the UN Principles for the Protection of Persons with Mental Illness and the Improvement of Physical and Mental Health Care ("The Principles") specifically provides for the protection of children in such cases. Special care in international and domestic law should be granted "to protect the rights of children, including, if necessary, the appointment of a personal representative other than a family member".¹³

The Principles recognize that every person with a mental illness, including children, must be equally able to exercise all civil, political, economic, social, and cultural rights. Such rights are enshrined in core international human rights doctrines, including the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, the International Covenant on Civil and Political Rights, and in other relevant instruments, such as the Declaration on the Rights of Disabled Persons and the Body of Principles for the Protection of all persons under Any Form of Detention or Imprisonment.

International standards such as the United Nations basic principles on the use of restorative justice programmes in criminal matters focus largely on strategies which emphasize restorative justice to assist those who become ensnared in criminal justice systems. The United Nations Convention on the Rights of the Child requires States to take appropriate measures to promote the physical and psychological recovery as well as social integration of child victims of abuse, torture, or any other form of cruel, inhumane, or degrading treatment.¹⁴

Children also benefit from special standards of care under international standards. Detention facilities must guarantee meaningful services which ensure the health, self-respect and sense of responsibility of children.¹⁵ While in custody, children must receive appropriate care, protection and individualized assistance, including social, educational, vocational, psychological, medical, and physical assistance.¹⁶

The Committee on the Rights of the Child has recognised that children with developmental delays or neurodevelopmental disorders or disabilities should not be in the child justice system at all, even if they have reached the minimum age of criminal responsibility. If not automatically excluded, such children should be individually assessed.¹⁷ Nonetheless, fair trial guarantees apply to all children under the Convention on the Rights of the Child, regardless of disability¹⁸ and, as the Committee on the

¹³ G.A. Res. 46/119, Principles for the Protection of Persons with Mental Illness and the Improvement of Mental Health Care, Principle 2 (Dec. 17, 1991).

¹⁴ G.A. Res. 44/25, United Nations Convention on the Rights of the Child, Art. 39 (Nov. 20, 1989).

¹⁵ G.A. Res. 45/113, United Nations Rules for the Protection of Juveniles Deprived of their Liberty (Havana Rules), Art. 12 (Dec. 14, 1990).

¹⁶ G.A. Res. 40/33, UN Standard Minimum Rules for the Administration of Juvenile Justice (Beijing Rules), Art. 13.5 (Nov. 29, 1985).

¹⁷ *Committee on the Rights of the Child, General Comment No. 24 (2019) on children's rights in the child justice system, CRC/C/GC/24, 18 September 2019, para. 28.*

¹⁸ *Convention on the Rights of the Child, Article 2, 40(2). Committee on the Rights of the Child, General Comment No. 24 (2019) on children's rights in the child justice system, CRC/C/GC/25, 18 September 2019, paras. 38-41.*

Rights of Persons with Disability has noted, measures of protection for people with disabilities should not be based on removing legal capacity.¹⁹

III. Strategic litigation and effective use of emerging evidence on children's brain development: Legislative and Judicial Framework in the USA

This section provides an overview of case law in the United States of America (USA) where strategic litigation has made effective use of emerging evidence on children's brain development. Law in the USA has only very recently progressed towards embracing the spirit of the aforementioned international standards. Since 2005, the USA Supreme Court has accepted arguments relating to children's brain science and the criminal sentencing of children, particularly in leading cases related to the death penalty and life imprisonment. These rulings have been influenced by neurodevelopmental research and the understanding that the differences between children and adults are critical to age-appropriate sentencing – a common-sense understanding that Supreme Court Justice Kennedy has stated is what "any parent knows."²⁰ In these rulings, the Court banned the use of capital punishment and mandatory life without parole for child defendants, limited life without parole for under 18s to homicide cases, and made such decisions applicable retroactively.

In *Roper v. Simmons*, the Supreme Court held that the death penalty is unconstitutional for offences committed while under 18 because it is a disproportionate punishment as immaturity and susceptibility to outside pressures and influences diminishes a child's culpability.²¹ The Court further noted that children's greater capacity for reform warrants a separate set of punishments and the nation's "evolving standards of decency" indicate that the death penalty is cruel and unusual when applied for offences committed by children. The Court cited the facts that 12 states had banned the death penalty in all circumstances and 18 more states banned the death penalty for under 18s.²²

Following *Roper*, the harshest available sentence for children was life without parole. The Supreme Court limited the use of life without parole to homicide offences in its 2010 ruling in *Graham v. Florida*.²³ In its decision, the Court emphasized that the punishment was unusual by showing it was rarely imposed in the US and noting overwhelming international consensus against harsh sentences for offences committed by children. The ruling in *Graham* applied to at least 123 people in detention at the time, 77 of whom were sentenced in Florida, and the remainder of whom were sentenced in 10 other states.²⁴ Although the ruling did not grant the release, it guaranteed them an opportunity for release.

Following *Roper* and *Graham*, approximately 2,500 people were serving life without parole for homicide-related offenses committed as children. In its 2012 decisions in *Miller v. Alabama* and *Jackson v. Hobbs*, the Court held that for children, mandatory life sentences without the possibility of parole violate the Eighth Amendment, and that states and the federal government must consider each defendant's unique circumstances to determine an individualized sentence.²⁵ In 2016, the Court held that such considerations apply retroactively, emphasizing its finding in *Miller* that life without parole should only be reserved for "the rare juvenile offender whose crime reflects irreparable corruption."²⁶ The Court in *Miller* also acknowledged that children's ability to make sound judgments are marked by "immaturity, impetuosity, and failure to appreciate risks and consequences."²⁷ The Court further noted that children accused of criminal offences are less able than

¹⁹Committee on the Rights of Persons with Disabilities, General Comment No. 6 (2018) on equality and non-discrimination, CRPD/C/GC/6, 26 April 2018, para. 49(c).

²⁰ *Roper v. Simmons*, 543 U.S. 551, 569 (2005).

²¹ *Roper v. Simmons*, 543 U.S. 551, 569 (2005).

²² *Id.* at 560.

²³ *Graham v. Florida*, 130 S. Ct. 2011 (2010).

²⁴ *Id.* at 2024.

²⁵ 132 S. Ct. 2455 (2012).

²⁶ *Id.* (slip op.) at 17.

²⁷ *Id.* citing *Graham and J.D.B. v. North Carolina*, 131 S.Ct. 2394 (2011).

adults to assist in their own defence and are likely to respond poorly to the high pressure of interrogation, putting themselves at a substantial disadvantage in criminal proceedings.

Since *Miller and Jackson*, 28 states and the District of Columbia have changed their laws for children convicted of homicide, including felony murder. Although all but four of these states previously required life without parole in homicide cases, their new laws provide mandatory minimums ranging from the opportunity for parole after 15 years (e.g., Nevada, West Virginia) to 40 years (e.g., Texas, Nebraska). As of December 2020, 30 states still allow life without parole as a sentencing option for offences committed by children, but two thirds of people serving life without parole were sentenced in only three states, Pennsylvania, Michigan, and Louisiana.

IV. Ten Points: How We better Connect Neuroscience and the Sentencing of Children

The following 10 points express the 2018 World Congress on Justice with Children's aims to improve the use of neuroscience in connection with the sentencing, rehabilitation and settling of children with the intention of encouraging its effective use globally. These remain particularly relevant in the context of the global covid-19 pandemic which has serious consequences on mental health.

Connection with Child Justice Systems

1. Sentencing, rehabilitation, and resettlement should take into account the impact of neuro-disabilities on a child's ability to function within society, their ability to understand the criminal process and their ability to engage with 'normal' rehabilitative processes.
2. Access to full screening and assessments for children with neuro-disabilities is key as this will support the development of individualized approaches such as how to manage (i) memory, (ii) communication and attention problems by modifying how children are asked to follow instructions, and (iii) impulsivity and socializing.
3. Rehabilitation and resettlement management plans for children in conflict with the law should incorporate neuro-disability assessments to ensure appropriate neurorehabilitation is provided and resources are allocated in an efficient and cost-effective manner.
4. Key individuals in and across the criminal justice system (e.g., police, prison employees, probation officers, lawyers, magistrates, judges), education, and health systems should be encouraged to attend specialized training aimed at developing greater awareness of the impact on children in conflict with the law who have delayed maturity due to adversity and neuro-disability.
5. Further research should be conducted that integrates forensic and clinical neuroscience models to better understand brain systems affected by neuro-disabilities and how neurocognitive disorders are linked to offending.
6. Further research is needed to support the development and implementation of effective rehabilitation and resettlement interventions with children who have neuro-disabilities.

Connections with prevention, precautions and education:

1. Public health initiatives should develop more robust strategies around mental health and psychosocial wellbeing, which would support earlier identification of neuro-disabilities and neuro-developmental factors that may lead to social exclusion (e.g., from school, family, work).
2. Public health initiatives should provide support earlier for children with neuro-disabilities such as through the provision of neurorehabilitation linked to education and training and also to their families through parental support or parental education.
3. Public health initiatives focused on prevention should inform and educate students about leisure activities involving alcohol and risk taking.
4. Public health initiatives focused on prevention should entail educative approaches to preventing traumatic brain injury in children (e.g., teachers, youth workers and sports coaches should be trained to better manage situations with a high risk of injury to students).

Acronyms:

Attention deficit hyperactivity disorder (ADHD)

Autism spectrum disorders (ASD)

Loss of Consciousness (LoC)

Traumatic brain injury (TBI)

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