Institution: University of Exeter

Unit of Assessment: UoA 4 Psychology, Psychiatry and Neuroscience

Title of case study: Advances in the Neuroscience of Trauma & Crime: Transforming justice globally for vulnerable people in custody

Period when the underpinning research was undertaken: 2006-2019

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Professor Huw Williams	Associate Professor of Clinical Neuropsychology	2001 – current
Dr Phil Yates	Research Fellow	2003-2007
Dr James Tonks	Honorary Lecturer	2003- current
Dr Avril Mewse	Senior Lecturer	1998 – current
Dr Crispin Burgess	Senior Lecturer	1996 - current

Period when the claimed impact occurred: 1 August 2013 - 31 July 2020

Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact

Research by Professor Huw Williams uncovered that 42 000 of the current UK prison population has some form of Traumatic Brain Injury (TBI) which is associated with impulsivity and problems in social reasoning. 25% of those prisoners experience significant ongoing problems as a result. This research transformed the view of antisocial behaviour in prisoners and led to changes in policy and practice. Awareness of the impact of brain trauma is now embedded into custodial processes both nationally (England and Wales) and globally (via the UN).

The key impacts are:

1) **Changed judicial and health policies in the UK and UN** to take account of TBI and Neurodisability;
2) **Changed judicial policy relating to minors**;
3) **New Worldwide sentencing guidelines** to account for Neurodisability.
4) **Changes in practice across the prison system** including mandatory Neurodisability screening, **enhanced support, and staff training for adult prisons** impacting 83,000 existing prisoners and 60,00 new entrants each year.

The former Chief Inspector of Prisons described the impact as: “the best example I know of academic research leading to positive results in terms both of policy and practice”

2. Underpinning research

Traumatic Brain Injury (TBI) is known to lead to long term disability, but its impact on behaviour and development was previously poorly understood. To establish a greater understanding of how TBI affects the brain, University of Exeter’s Professor Williams and Dr Phil Yates co-led an epidemiological investigation in a population of Emergency Department attendees with confirmed TBI [**3.1**]. The study, which looked for patterns of occurrence, found a higher prevalence rate of TBI in young children and adolescents. Williams and University of Exeter colleagues later went on to identify that younger brains, especially if injured during development, are more vulnerable than older brains to the effects of repeated concussive blows - in particular - associated with problems in impulse control and attention [**3.2**]. Furthermore, they found that if brain injury occurred during childhood it can lead to enduring problems with social communication and mood, as well as poor empathy [**3.2**; **3.4**].

Such social problems are found at disproportionate levels in the prison population, a phenomenon that has largely been linked to ‘disorders of the personality’ rather than brain trauma, with any links with TBI were considered to be coincidental. However, having established that various forms of TBI can lead to long term social problems [**3.2**], Williams et al examined the prevalence of TBI in

offenders and whether it is linked to crime profiles [**3.3**; **3.4**]. In a retrospective cohort study with adult prisoners, they found 17% had suffered moderate to severe TBI and more than 50% had mild TBI [**3.3**]. They identified that offenders with a history of TBI exhibited greater rates of violence, increased substance abuse, and repeated offending compared to those without TBI [**3.3**]. Furthermore, the study revealed that those with TBI had been incarcerated earlier in life compared to those without – at age 16 years versus 21 years [**3.3**]. Suggesting TBI as a factor in earlier more pervasive offending.

To better understand the significance of TBI in adolescent offenders, Williams *et al.* studied occurrence rates in a cohort of young male offenders, and discovered that over
45% of the juveniles in custody had suffered a loss of consciousness due to a TBI, a rate five-fold higher than the general population [**3.4**]. This body of research showed, for the first time, that many people in prison may display behaviours such as lack of empathy, impulsivity, and extreme risk taking as a result of a Traumatic Brain Injury, rather than the standard assumption that offenders behave this way due a "disorder of personality". Furthermore, the research identified that young offenders exhibit TBI at rates five times higher than the normal population, highlighting the need for appropriate screening and interventions at all stages of the judicial process as a potentially means to reduce risky behaviour and repeat offending.

Williams and his team subsequently worked with The Disabilities Trust and the Offender Health Research Network to secure funds for piloting treatment services [**3.5**]. They screened for injuries in inmates to identify rates of TBI and associated behaviours, whilst training prison staff in TBI issues and how to evaluate for TBI. Participants within the pilot confirmed that self-reported problems of "forgetting", "nausea" and "headaches" were found to be associated with TBI, rather than drug use as previously assumed [**3.5**], and rates of suicidality and self-harm were particularly high in incarcerated young people with TBI [**3.5**]. Building on an earlier body of work the team developed a programme for "Brain Injury Link Workers", who act as key-workers to enable better awareness of TBI and other neuro-disabilities (ND) in juveniles and young adults in prisons [**3.5**] which led to its national adoption [see also **5.4]**. Crucially, this pilot demonstrated it was feasible to intervene whilst individuals were within custodial settings **[3.5].**

Evidence synthesis led by Prof Williams indicates that early intervention to enable behaviour change in this population could improve treatment of prisoners and reduce the risk of self-harm and re-offending **[3.6**].

3. References to the research

3.1 Yates, P.J., Williams, W.H., Harris, A., Round, A. & Jenkins, R. (2006). An epidemiological study of head injuries in a UK population attending an emergency department. *Journal of Neurology Neurosurgery & Psychiatry*, *77*(5), 699-701. DOI: 10.1136/jnnp.2005.081901

3.2 Tonks, J., **Williams, W.H.**, **Yates, P.**, **Frampton, I.**, **& Slater, A.M**. (2010). Peer-relationship difficulties in children with brain injuries: comparisons with children in mental health services and healthy controls. *Neuropsychological Rehabilitation*, 20, 922-935. DOI: 10.1080/09602011.2010.519209

3.3 Williams, W.H., **Mewse, A.J.**, **Tonks, J.**, **Mills, S.**, **Burgess, C.N.,** & **Cordan G**. (2010). Traumatic Brain injury in a Prison Population: Prevalence, and Risk for Re-Offending. *Brain Injury, 24*(10), 1184-1188. DOI: 10.3109/02699052.2010.495697

3.4 Williams, W.H., **Cordan, G.**, **Mewse, A.J.**, **Tonks, J.**, and **Burgess, C.N**. (2010). Self-Reported Traumatic Brain Injury in Male Young Offenders: A risk factor for re-offending, poor mental health and violence? Neuropsychological Rehabilitation, 20(6), 801-812. DOI: 10.1080/09602011.2010.519613

3.5 Chitsabesan, P., Lennox, C., **Williams, H.W.**, Tariq, O., Shaw, J. (2015). Traumatic Brain Injury in Juvenile Offenders: Findings From the Comprehensive Health Assessment Tool Study

and the Development of a Specialist Linkworker Service. *J Head Trauma Rehabilitation*, 30(2), 106-115. DOI: 10.1097/HTR.0000000000000129

3.6 Williams, W.H., Chitsabesan, P., Fazel, S., McMillan, T., Hughes, N., Parsonage, M., **Tonks, J**. (2018). Traumatic brain injury: A potential cause of violent crime? *The Lancet Psychiatry,* 5(10), 836-844.

4. Details of the impact

In the UK, roughly a million people go through courts and around four million people are affected by crime each year. Following the discovery that up to 50% of the UK prison population has some form of TBI, that young offenders have TBI at five times the rate of normal population, and that the associated behaviours produce a highly vulnerable group of people, Williams has spent several years engaging with policy makers to ensure the justice system accounts for Traumatic Brain Injury. With national (England and Wales) and global (via the UN) reach, this highly engaged body of work has: 1) placed neurodisabilities (ND) and TBI on the agenda of judicial systems; 2) led to major restructuring of judicial policies for minors; 3) led to mandatory ND screening, enhanced support, and staff training for adult prisons; and 4) implemented new sentencing guidelines to account for ND.

Placing Neurodisabilities (ND) and TBI on the agenda of judicial systems

The work of Williams and colleagues has been instrumental in placing TBI as a key focus for judicial policy makers. For example, England's Director of Health and Justice NHS Justice, confirms:

> "*The research by Williams and colleagues demonstrated that there was a very high level of traumatic brain injury (TBI) in prison populations, and, that it was associated with early and repeated violence and mental health issues - particularly suicidality….As a health condition, TBI, therefore became an important focus for the judicial system*." [**5.1**].

This, she explains, has led to changes throughout the entire system, prompting the re-design of services that integrate trauma-informed perspectives into policies around crime [**5.1**].

In 2017, the NICE guidelines on Mental Health of Adults in the Criminal Justice System were updated to include provisions around TBI [**5.2**]. Williams, drawing on insights gained through his body of research, received specific acknowledgement of his provision of expert testimony to the guidance committee [**5.2**]. The new recommendations covered all occasions where individuals come into contact with the criminal justice system and highlighted the need for staff training on TBI issues, provisions for the recognition and assessment of TBI via a 'Head Injury' screening at custody reception, and recommendations on ensuring appropriate interventions particularly in relation to managing suicide risk [**5.2**].

Responding to evidence from Williams a review of the UN Convention on the Rights of the Child in Justice settings concluded that children with neurodisability (ND) should not only have their needs met whilst detained, but should not be made at risk of being imprisoned in the first place [**5.3**]. The new convention states:

> *"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."*

They recommend the 187 signatory member states of the convention support children and young people with ND to be enabled to be in society (2019) [**5.3**].

Major restructuring of judicial policies for minors

All young people (under 18) in custody (~3,000/year) in England and Wales are now assessed and treated for TBI and other neurodisabilities (ND) [**5.4**]. England's NHS Justice, with Williams as an advisor [**5.1**], adopted a 'Secure Stairs Model' for Young Offender Institutions, to provide therapeutic resources for those who are classified as vulnerable, including those with ND and TBI. The model was launched by NHS England in 2018 [**5.5**] and represented a move towards integrated healthcare and rehabilitation in the prison system that creates a better environment for rehabilitation success. England's Director of Health and Justice confirms the paradigm shift it represents, stating that the programme is being implemented across England,

> *"to replace traditional incarceration…to ensure that children and young people are provided with therapeutic community approaches informed by evidence base on trauma and neuro-disability"* [**5.1**].

Led to mandatory ND screening, enhanced support, and staff training for adult prisons

In adult prisons, it is now mandatory to screen for TBI, provide key-workers, and train staff to identify and support brain injury issues. Exeter worked closely with the All Party Parliamentary Group on Acquired Brain Injury and their recommendations led to all prisons conducting mandatory screening for TBI, confirmed by the both the Secretary of state and the Under-secretary of state for Justice & Lord Chancellor [**5.4]**. This change impacts 83,000 (Offender Management Statistics Bulletin, England and Wales, ONS) currently sentenced prisoners and approximately 60 000 entrants into the criminal justice system each year. In addition, specialist health referrals to assess for TBI are now made when a prisoner displays symptomatic behaviour, to determine appropriate treatment pathway, where previously a personality disorder diagnosis would have been made [**5.4**].

Drawing on evidence from Williams and his team, the UK parliament's Justice Select Committee [**5.6**] concluded the need for wholesale reform of the prison system to reduce violence and manage suicide risk in young adults. Their recommendations focused on restorative justice and trauma-informed approaches, which included accounting for TBI and the development of appropriate support systems such as specialised link workers piloted by the Exeter Team [**5.4**].

In response to the recommendations from the Justice Select Committee, the Ministers of Prisons, implemented measures to ensure, '[*a]ll civil, remand and sentenced people in prison will have a dedicated prison key worker*' by March 2019 [**5.7** p.5-6] and funding for this initiative has been received by ten prisons so far [**5.4**].

In 2020 the Ministry of Justice confirmed the extent to which Acquired Brain Injury (which includes TBI) has now been integrated into the justice system [**5.4**], in part a response to recommendations set out by a report [**5.4**] authored by Williams and colleagues. The Under Secretary of State for Justice, explains,

> "*Individuals with ABI are within scope for NHS England's Liaison and Diversion (L&D) services, which provide assessments and referrals to support for vulnerable people in contact with the criminal justice system. L&D services have been rolled out across police custody suites and magistrates courts in England… [and there is a] similar system in Wales"* [**5.4**].

Furthermore, basic awareness training on Acquired Brain Injury (ABI) is now included in the Prison Officer Entry Level Training, *"providing all new prison officers with an overview of what an ABI is, what may cause it, and what symptoms might result from it"* [**5.4**].

Implemented new national and global sentencing guidelines to account for ND

Sentencing guidelines in England and Wales now recommend that judges account for developmental maturity and TBI. The Sentencing Guidelines were updated first in 2017, and again in 2020, incorporating evidence from Prof Williams, to account for *"Any experiences of brain injury or traumatic life experience (including exposure to drug and alcohol abuse) and the developmental*

impact this may have had" [**5.8**]. The latest Sentencing Guidelines have added Acquired Brain Injury to the list of mental health disorders to consider in sentencing, confirming recognition of ABI and TBI in the criminal Justice system [**5.8**].

Furthermore, the UN office on Drugs and Crime requested Williams become an advisor to develop new guidelines for judges worldwide to account for developmental maturity and TBI. The 2018 and 2019 manuals [**5.9**] created urge judges in the UN's 187 signatory states to consider how brain injury and trauma contribute to crime and the need to address neurological disorders and development to reduce future crimes. When reflecting on the growing awareness of TBI issues throughout the justice system, the former Chief Inspector of Prisons says the following:

> *"I can only say that the transformation in understanding is remarkable. For this I give most credit to Professor Williams, whose research is not only highly regarded by Ministers and officials…It is the best example I know of academic research leading to positive results in terms both of policy and practice"* [**5.10**].

5. Sources to corroborate the impact

5.1 Letter from Kate Davies, Director NHS (Justice) outlining the breadth and depth of impact on integrating justice and health systems

5.2 NICE Guidelines on Mental Health of Adults in Contact with the Criminal Justice System (2017) See page 41 for reference to brain injury and p.10 for the acknowledgement.

5.3 General comment No. 24 (2019) on children's rights in the Child Justice system Committee for the Rights of Children Section 28.

5.4 Correspondence sent by Secretaries of State (**a**) Under Secretary of state for justice and (**b**) Secretary of state for Justice & Lord Chancellor, to update on adoption of recommendations from the Criminal Justice and Acquired Brain Injury group and the APPG on ABI, on the training of staff and link worker services for people in prisons

5.5 Children and Young people in Custody. See: https://web.archive.org/web/20201201090412/https://www.england.nhs.uk/commissioning/health-just/children-and-young-people/ A new service called Secure Stairs, for which HW was an advisor, was established to take account of trauma and neurodisability in young people in custody through the provision of therapeutic environments.

5.6 Justice Committee Proceedings: Evidence produced by HW (**"**Children and Young People with Neuro-Disabilities in the Criminal Justice System" – Policy Report by British Psychological Society, Chaired by Prof H Williams) provided to the Justice Committee of UK Parliament for "The treatment of young adults in the criminal justice system (2016). https://web.archive.org/web/20201201090525/https://publications.parliament.uk/pa/cm201617/cmselect/cmjust/169/16902.htm

5.7 Letter from Minister for Prisons MP

5.8 Sentencing Council. (2020). Sentencing Children and Young People. Sentencing offenders with mental disorders, developmental disorders, or neurological impairments - Effective from 1 October (2020). Changes made in response to evidence provided in consultation from CJAABIG (Criminal Justice and Acquired Brain Injury Group) Co-Chaired by HW and General Lord Ramsbotham.

5.9 Justice for children in the context of counter-terrorism: A training manual, UN Office on Drugs and Crime (2019) https://web.archive.org/web/20201201090618/https://digitallibrary.un.org/record/3825844?ln=en

5.10 Letter from former Chief Inspector of Prisons