

TECH-DRIVEN REHABILITATION: A NEW FRONTIER IN JUSTICE REFORM

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Abstract

The prison system in our society is set up on the humanistic principle which inscribes that even if an individual commits a crime, he does not cease to be a human and therefore his human rights must be protected against infringements and violations with the exception of procedures established by law. Introduction of persuasive technologies like self-service or smart kiosks in the prison premises challenges the criminogenic needs of offenders which are in turn pitted in alignment to their recidivistic behavior. This smart rehabilitation which acts as a non-consensual neuro-interventions aimed to alter criminal minds sits at the core of this paper's ethical debate. This paper shall aim at studying the need for introduction of technological interactions with the offenders to provide them a right against digital exclusion once they are placed back in the society; how technology contributes to reformative justice in a globalizing world and its effects on recidivistic nature of offenders; and how the global trend of socio-politico narrative has shifted to having a humanistic approach to advocate for the offenders' right to a second chance in tandem with right to be forgotten.

Keywords: *rehabilitative justice, persuasive technologies, smart rehabilitation, recidivistic behavior, digital exclusion.*

I. Introduction

Since the age of the panopticon prisons³, new and advanced technological instrumentalities have been put to use for management and rehabilitation of offenders. Globalization has perennially contributed to transform our outlook on

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² Thomas McMullan, *What does the panopticon mean in the age of digital surveillance?*, The Guardian (Jul. 23, 2015 at 12:30 PM), <https://www.theguardian.com/technology/2015/jul/23/panopticon-digital-surveillance-jeremy-bentham>

how to import more efficient and humane ways of rehabilitating people in conflict with laws. The evolving paradigm has in turn made available new technologies and their know-how to the majority of nations. Consequentially, how the criminal justice system enforces law, traces its breach, monitors offenders and ex-convicts, and rehabilitates them back to the society, etc., has seen a global shift in its approach. Such deployment of technology can be seen in the examples of GPS tagging of offenders, sobriety tags for addicts and drug offenders, drone-blockers to check usage of contraband, cell phones, etc., within the prison premises, body-worn cameras for offender cooperation, reduction of violence, etc.⁴

The modern age of technology has introduced innovative rehabilitative techniques such as use of stimulation rooms, audio-visual documentaries, power point presentations to escalate and catalyse the neuro-interventions⁵ with an aim to effectively rehabilitating the offenders and target correct their criminogenic needs married to their recidivistic behaviour. While globalization has significantly affected this new era of ‘smart rehabilitation’⁶, it also sparks the conflicting debate whether persuasive technologies (PT)⁷ attack the right to mental liberty of such individuals.⁸ The inherent legal and ethical questions around autonomy and privacy are thus invoked at the core of usage of technology as a means of rehabilitation. The question of moral right to mental liberty must be explored vis-à-vis consent of offenders to use of persuasive technologies as an aid to corrective rehabilitation.

⁴ *Ibid.*

⁵ Emma Dore-Horgan, *Do Criminal Offenders Have a Right to Neurorehabilitation?*, *Criminal Law Philosophy*, (2022), <https://doi.org/10.1007/s11572-022-09630-y>.

⁶ Nina Champion *et. al.*, *Smart Rehabilitation: Learning how to get better outcomes*, PLA (December 2013), https://fbclientprisoners.s3.amazonaws.com/Resources/PLA_Smart_Rehabilitation_Report.pdf.

⁷ PTs encompass the domain of interactive information technology tailored specifically to influence users' attitudes or behaviors within the realm of human-computer interaction (HCI). In essence, it explores how technology can be strategically crafted to influence human behavior in desired ways, often with the intention of promoting positive changes or achieving specific outcomes. See, Wenker Kilian, *A Systematic Literature Review on Persuasive Technology at the Workplace*, 3 *Patterns* 8 (2022): 100545, <https://doi.org/10.1016/j.patter.2022.100545>.

⁸ CHAMPION, *supra* note 6.

However, these concepts largely remain a global north dominated excavation which find its way in the corrective facilities of the global south without adequate examination of the unique challenges of specific regions. In this context, it becomes necessary to study the dual role of technology – firstly, the impact of digital technology on the culture of prisons; and secondly, the provision of technology in correcting and rehabilitating the prisoners' recidivistic behaviour.

II. Technology as an Assistive Rehabilitation Tool

Several countries are progressively on their path to adopt technology based strategies within prison classrooms to engage the offender-participants, stimulate their emotions, and challenge mistaken beliefs by implementing digital behavioural modification therapy on the group.⁹ These include famous programs including Scared Straight™, Moral Reconciliation Therapy™, Reality Therapy™, Thinking for a Change™, and Gorski's Alcohol and Drug Relapse Prevention Model™.¹⁰ It becomes imperative for the prison authorities to carefully identify the most effective and appropriate tool from amongst all available digital programs to target the respective offender population based on individual assessment of behavioural patterns and attitudes. For this reason, it is often suggested to integrate these smart rehabilitative technologies with the traditional monitoring techniques.¹¹

Globally, a plethora of studies have now been undertaken to examine the unique outcomes promised by the computer-assisted digital interventions in the psychosocial and behavioural health of offenders when conducted under controlled and secured settings. While it is a limitation of this research study to

⁹ Fran Fairbairn, *Trust, Power, and Transformation in the Prison Classroom*, 7(2) JPER 160, (2021), <https://files.eric.ed.gov/fulltext/EJ1320889.pdf>; *See also*, Clint Smith, *These men aren't barbaric or malign – Inside a US prison classroom*, TheGuardian (Sep. 23, 2015, 11:30AM), <https://www.theguardian.com/teacher-network/2015/sep/23/inside-prison-classroom-education-prisoners-america..>

¹⁰ Ben Stevenson & M. D. Roblyer, *Using Technology-Based Strategies to Change Drug-Related Attitudes and First-Time Offenders*, Vol. 57, No. 4 JCE 327, (2006), <https://www.jstor.org/stable/23282806>.

¹¹ April Pattavina, *The Emerging Role of Information Technology in Prison Reentry Initiatives*, 68(2) FederalProbation 40, (2004), https://www.researchgate.net/publication/268340916_The_Emerging_Role_of_Information_Technology_in_Prison_Reentry_Initiatives_The_New_Technology_of_Reentry.

not be able to delve into the many novel digital interventions designed to target psychosocial and behavioural health of offenders, a few can be crisply chalked out to further the objective of this study. For the purpose of this research study, it is imperative to understand how certain technologies can affect, alter, and modify behavioural patterns in individuals.

To determine the role such technologies play in altering what people think and how they choose to behave, a momentarily diversion must be taken to understand what are persuasive technologies. Lighthart et. al. (2021) have explained the design of persuasive technologies to mean “*digital technologies, such as mobile apps, video games and virtual reality systems, that are deployed for the explicit purpose of changing attitudes and/or behaviours, without using coercion, deception or extreme forms of psychological manipulation (such as hypnosis or indoctrination), and without exerting a direct (not psychologically mediated) physical effect on the brain*”.¹²

Such technologies are explicitly tailored to alter behaviours and/or attitudes of the targeted individuals by catering to a desired outcome which would otherwise not be easy to achieve.¹³ Persuasive technologies are not intended to achieve such outcomes with the application of any direct intervention on the brain, or deception, or extreme manipulation, or any kind of coercion.¹⁴ Instead, it intends to cause behavioural changes and psychological alterations typically with the help of encouragement and feeding of relevant information to the user. So even going by literal definition, persuasive technologies cannot be arbitrarily flagged as coercive. Nonetheless, individuals have been found to be coerced by their routine usage and application.¹⁵

A stream of argument around the impact on mental liberty and autonomy and the problem of consent its application on prison inmates has been made by some

¹² Sjors Lighthart, Gerben Meynen, and Thomas Douglas, *Persuasive Technologies and the Right to Mental Liberty: The “Smart” Rehabilitation of Criminal Offenders*, Cambridge UK: CUP (2022), <https://www.ncbi.nlm.nih.gov/books/NBK592241/>.

¹³ Dan Lockton, David Harrison & Neville Stanton, *Design with Intent: Persuasive Technology in a Wider Context*, Oinas-Kukkonen, H., Hasle, P., et. al. (eds.), Persuasive Technology, Springer 2008, [ISBN 978-3-540-68500-5].

¹⁴ *Ibid.*

¹⁵ SJORS, *supra* note 12; See also, Hadlington Lee & Victoria Knight, *Public Acceptability of Prisoners’ Access and Use of Digital Technologies in the UK*, 102 *The Prison Journal* 2 (2022): 237–55, <https://doi.org/10.1177/00328855221079290>.

authors.¹⁶ It would be a bold assumption that prison inmates, most of whom have committed crimes succumbing to their criminogenic needs, would even understand the implications of technology modifying their psychological and behavioural tenets of mental health; or what mental liberty means and what is the true nature of rehabilitative program they are consent to.¹⁷ It is likely that prison inmates are ‘sternly nudged’ and even at times openly coerced into consenting for sitting in such rehabilitative programs using persuasive technology for correcting deviant behaviour. This pressure is often seen under the guise of ‘commitment to a forensic mental institution’ or mandating enrolment in ‘sex offender treatment programme’ as part of the sentence rendered by the Courts of Justice itself.¹⁸ Arguably, usage of persuasive technologies on prison inmates sans their well-informed, unequivocal consent might serve as an infringement of some fundamental legal rights, and be treated lawful regardless given its output would resonate with the State’s regulatory objective of prevention and deterrence of crime.¹⁹

Regardless of the issue of informed consent, in today’s technologically driven world, the research ecosystem on criminal justice is getting richer with curiosity driven literature around the assistive role of digital rehabilitative interventions being developed across the globe. However, it must be kept in mind that there is a gap in what is theoretically being challenged and its translation into what the standard practice in most countries stands to be as of today.²⁰

¹⁶ Jesper Ryberg, *Neuroscience and Criminal Justice: Introduction*, 18(2) *JOURNAL OF ETHICS* 77 (Spl. Iss: Neuroscience and Criminal Justice), (2014), <https://www.jstor.org/stable/43895861>.

¹⁷ Barton L. Ingraham & Gerald W. Smith, *The Use of Electronics in the Observation and Control of Human Behavior and Its Possible Use in Rehabilitation and Parole*, 7(2) *Criminology* 35, (1972), <https://www.jstor.org/stable/42909755>; See also, *SJORS*, *supra* note 12.

¹⁸ United Nations Office On Drugs And Crime, *Introductory Handbook on The Prevention of Recidivism and the Social Reintegration of Offenders*, UNODC, 2018, https://www.unodc.org/documents/justice-and-prison-reform/18-02303_ebook.pdf.

¹⁹ SMITH, *supra* note 17; See also, *SJORS*, *supra* note 12.

²⁰ H. Kip et. al., *eHealth in Treatment of Offenders in Forensic Mental Health: A Review of the Current State*, Vol.9 FP 42, (2018), DOI: 10.3389/fpsy.2018.00042; See also, Lasnier et. al., *Implementing an Indoor Smoking Ban in Prison: Enforcement Issues and Effects on Tobacco Use, Exposure to Second-hand Smoke and Health of Inmates*, 102(4) *CJPH* 249, (2011), DOI:10.1007/BF03404042.

In studying these technologies, it is assessed that they are structured in a manner that allows them to facilitate continued support to the prisoners even after their release from the prisons. These effectively conjoin rehabilitation support offered during the prison term with the assistance catered by probation service officers once they enter back in the community. Today, more and more examples of emerging technologies are being evolved to extend rehabilitative services in an efficient and cost-effective manner that can cement successful social integration and promote community engagement even after a long time from their release from prisons.²¹

United Kingdom (UK)

Interaction of offenders with technology has lent digital support for enabling these individuals to have a better chance of quality education, enhanced training, and employment. To make the offenders more digitally included, turning to the examples of English and Welsh prisons which have introduced the concept of a ‘*Virtual Campus*’²² seems beneficial.²³ These Virtual Campus have been drawing attention to their uniquely progressive format that keeps technological rehabilitation of offenders at its heart.²⁴

²¹ Nupur et. al., *India Justice Report 2020: Ranking States on Police, Judiciary, Prisons and Legal Aid*, TATA Trusts (Jan. 2021), <https://www.tatatrusters.org/Upload/pdf/ijr-2020-overall-report-january-26.pdf>; Sajith Karikkandathil, *Digital Technology and the Prison of the Future*, Microsoft (October 30, 2016), <https://news.microsoft.com/en-xm/2016/10/30/digital-technology-and-the-prison-of-the-future/> (last visited on May 02, 2024 12:30PM).

²² Virtual Campus are a digital setup or platform to provide facilitation of education, training programs, search for post-release employment opportunities, and development of skills including usage of internet and the allied tools, each of which prove to be vital elements of a digitally evolved society. It has been seen that offenders under Virtual Campus programs have felt a sense of normalcy and engagement, and a boost of confidence allowing them to progress faster in their rehabilitation programs which ultimately helps them even-kneeled settle back into the society.

²³ Elison Davies et. al., *The Role Of Technology In Offender Rehabilitation*, Vol. 5 ACJ 107, (2018), https://www.researchgate.net/publication/325569402_The_role_of_technology_in_offender_rehabilitation.

²⁴ Turley & Webster, *Implementation and delivery of the Test Beds Virtual Campus: Case Study*, NatCen (2010), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/32322/11-827-implementation-of-test-beds-virtual-campus.pdf.

A new era of ‘*digital prisons*’²⁵ is making its way through advanced nations, such as the one in UK by the name ‘Her Majesty’s Prison (HMP) Berwyn’²⁶. Here, a separate laptop and telephone is provided to each inmate for them to order their own toiletries and other similar products, managing their visits outside the prison and organizing their appointments within the prison as required. Similarly, in Norway, prisons have been built to incorporate within the architectural designs rehabilitative technologies including provisions for digital education, training resources and even include in-cell digital televisions.²⁷ The principle underlying such a change supports the thought that prison life should function to facilitate smooth transition back to the community life after the convicts are released.²⁸

*Virtual Campus*²⁹, as previously discussed, has also been used to study and provide evidence based interventions around the psychosocial and behavioural health of offenders that could be linked to their recidivistic behavioural patterns.³⁰ In 2015, the United Kingdom (UK) saw the first healthcare program and the first digital offender rehabilitative intervention being implemented in its prisons through a computer-assisted therapy program called ‘*Breaking Free Online*’ which works towards treating alcohol and drug misuse among convicts. Following its success, a similar ‘*Breaking Free from Smoking*’ program has been implemented to offer assistance and psychosocial support to convicts who smoke with an aim to make prisons smoke-free.³¹

In the example of UK’s *Breaking Free Online*, once the offenders activate their accounts on the portal, they are allowed to access it not only after their release

²⁵ Carolyn McKay, *The Carceral Automaton: Digital Prisons and Technologies of Detention*, 11(1) IJCJSJ 100, (2022), <https://doi.org/10.5204/ijcjsd.2137>.

²⁶ HER MAJESTY’S PRISON & PROBATION SERVICE, <https://www.gov.uk/government/organisations/her-majestys-prison-and-probation-service> (last visited on May 01, 2024 at 1:20PM).

²⁷ E.M. Toreld, Kristin O. Haugli, & A.L. Svalastog, *Maintaining normality when serving a prison sentence in the digital society*, 59(6) *Croat Med J.* 335, (2018), doi: 10.3325/cmj.2018.59.335.

²⁸ ELISON, *supra* note 23.

²⁹ E. Champion & K. Edgar, *Through the gateway: How computers can transform rehabilitation*, The Prison Reform Trust (2013), <http://www.prisonreformtrust.org.uk/portals/0/documents/through%20the%20gateway.pdf>.

³⁰ *Id.*

³¹ ELISON, *supra* note 23.

but even in cases where they are transferred from one prison to another for any reason administrative or otherwise.³² The inmate's account on *Breaking Free Online* can even be augmented with and connected to a 'companion cell phone app'.³³ These accounts would be sent reminder alerts on how to effectuate methods and utilise coping strategies when they are pinned in high risk locations, via tracking the accounts through GPS technologies, which these individuals and their companions can pre-select with the help of apps like google maps.³⁴ Another feature of this app is the provision of other relapse prevention strategies, other than the ones for which the prison inmates had been originally registered. The app would take note of requisite appointments that the prison inmates may have scheduled on any given day, and send them calendar alerts at regular intervals to ensure they timely meet their probation officer or other members of the rehabilitative support team, whichever applicable.³⁵

United States of America (USA)

Similar to the *Breaking Free Online* program, in the prisons of USA a relapse prevention app by the name, the *Addiction-Comprehensive Health Enhancement Support System (A-CHESS)* has been developed and utilized to provide support to prison inmates who have been recently released after completion of their prison term. This app assists such individuals to avail intervention options if they are again struggling with substance abuse; or to partake in and access virtual support network; or to coordinate and manage their treatment sessions, etc.³⁶

³² *Id.*

³³ BREAKING FREE FROM SUBSTANCE USE: EVIDENCE-BASED RECOVERY SUPPORT PROGRAMME, <https://www.breakingfreeonline.com/> (last visited on May 01, 2024, 2:10PM).

³⁴ RUSSELL WEBSTER: RECOVERY APPS GO TO THE NEXT LEVEL, <https://www.russellwebster.com/recovery-apps-go-to-the-next-level/> (last visited on May 01, 2024, 2:30PM).

³⁵ Dugdale, et al., *A qualitative study investigating the continued adoption of Breaking Free Online across a national substance misuse organisation: Theoretical conceptualisation of staff perceptions*, 44(1) JBHSR 89, (2017), DOI: 10.1007/s11414-016-9512-0; ELISON, *supra* note 23.

³⁶ Gustafson et al., *A smartphone application to support recovery from alcoholism: A randomized clinical trial*, 71(5) JAMA psychiatry 566, (2014), DOI:10.1001/jamapsychiatry.2013.4642.

Both quantitative and qualitative studies have concluded how these computer assisted therapeutic programs have been successful in reducing offenders' involvement with alcohol and drugs, improved their quality of life, reduced psychosocial impairment, overcome anxieties, and improved their coping mechanisms, and mitigate their recidivistic behaviour, ultimately significantly reducing their chancing of re-offending and thus offering rehabilitation and social re-integration in an enhanced sense.³⁷

Even the United States of America (USA) has adapted technology into its correctional and rehabilitative facilities including the *Therapeutic Education System (TES)*³⁸ and *Motivational Assessment Program to Initiate Treatment (MAPIT)*³⁹ both of which are digital programs aimed at reducing criminogenic risk factors of offenders like substance abuse.

Technologically advanced research programs have also been implemented in prisons of USA and Sweden targeting reduction of *intimate partner violence*.⁴⁰ These aim to study behavioural patterns of such offenders and their emotional reaction to interactive computer-based simulation of intimate partner violence scenarios based on which alterations in the program are made to influence and change such violent behaviours.

Canada

Studies are ongoing in Canada to incorporate corrective simulations for offences relating to child sexual abuse and violent sexual offences.⁴¹ These studies show positive results so far and significantly suggest that these technologies have the ability to improve empathetic response and correct deviant sexual behaviour of the offenders. The Correctional Services of Canada (CSC) endeavors to enhance

³⁷ DUGDALE, *supra* note 35.

³⁸ Chaple, M., et. al., *A Comparative Study of the Therapeutic Education System for Incarcerated Substance-Abusing Offenders*, 96(3) TPJ 485, (2016), <https://doi.org/10.1177/0032885516636858>.

³⁹ Spohr, S. A., Taxman, F. S., & Walters, S. T., *The relationship between electronic goal reminders and subsequent drug use and treatment initiation in a criminal justice setting*, Vol. 51 Addictive Behaviors 51, (2015), <https://doi.org/10.1016/j.addbeh.2015.07.005>.

⁴⁰ Levesque, D., Velicer, W., Castle, P., & Greene, R., *Resistance Among Domestic Violence Offenders: Measurement Development and Initial Validation*, 14(2) Violence Against Women 158, (2008), DOI:10.1177/1077801207312397.

⁴¹ Id.

its rehabilitation efforts through the utilization of technological innovations such as RFID tags⁴² and the implementation of the Virtual Correctional Program Delivery Model. These initiatives are aimed at improving the effectiveness of program delivery, expanding the range of services offered including education, addiction management, and mental health support, and ensuring adaptability to the diverse needs of offenders.⁴³

Australia

A unique digital intervention program by the name ‘*Level-Up*’ is being used in Australian prisons to address and modify the thinking skills of offenders.⁴⁴ Technology is also being heavily relied on for providing telehealth services along with providing videoconferencing services to offenders for having a wider access to health and social care personnel. A similar study has also been carried out in USA to examine how ‘*virtual vignette sessions*’ use avatars to assess conflict resolution and negotiant skills of prisoners⁴⁵.

South Korea

⁴² RFID tags represent a tracking technology employing radio frequency for identification, tracking, and communication with objects and individuals. Functioning as intelligent labels, RFID tags can store diverse data, including serial numbers, brief descriptions, and extensive information. Certain RFID tags integrate cryptographic security measures to ensure robust verification and authentication. See, IDENTIV, <https://www.identiv.com/resources/blog/what-are-rfid-tags-and-how-are-they-used#:~:text=RFID%20tags%20are%20a%20type,and%20even%20pages%20of%20data> (last visited on May 20, 2024).

⁴³ G. Catherine, *CSC: Preparing for the Future of Corrections*, Technology (Jan. 5, 2022), <https://technologymagazine.com/company-reports/csc-preparing-future-corrections> (last visited on May 18, 2024).

⁴⁴ Pfeifer, J., & Conway, S., *Gaming And Technology As A Platform For Enhancing Offender Wellbeing*, Vol. 1, SRB, (2017), <http://hdl.handle.net/1959.3/439114>; See also, Victorian Institute of Forensic Mental Health, *Annual Research Report (2016-2017)*, CFBS, ISSN 2206-0812, https://www.forensicare.vic.gov.au/wp-content/uploads/2016/09/CFBS-2016_17-Annual-Research-Report-ONLINE-002.pdf.

⁴⁵ Laura Dellazizzo et. al., *Evidence on Virtual Reality-Based Therapies for Psychiatric Disorders: Meta-Review of Meta-Analyses*, 22(8) J. Med. Internet Res, (2020), DOI: 10.2196/20889; See also, Hubal et al., *How do varied populations interact with embodied conversational agents? Findings from inner-city adolescents and prisoners*, 24(3) CHB 1104, (2008), doi: 10.1016/j.chb.2007.03.010.

*Virtual Rehab*⁴⁶ is yet another persuasive technology-based project that uses virtual reality technology to rehabilitate prison inmates. This virtual reality rehabilitative programs offers a variety of interactive tools which include providing education on a plethora of themes, ranging from sexual offences, to family violence, to other multitude of psychological challenges consisting of emotional and mental disorders, etc.⁴⁷ It is interesting to study how this program works and positively influences psychological and emotional response in individuals. Prison inmates who are placed in such programs are made to take on scenarios that allow for ‘*interactive role play*’ that place the inmate in a reversed aggressor-victim situation.⁴⁸ This pushes the prison inmate to step into the shoes of the victim which is key to developing empathy in individuals.

Besides this, the program also provides formal education, training programs including ones which can be used by ex-convicts to learn and develop professional skills which can help them function and contribute better in the society.⁴⁹ These programs have provided rehabilitation and treatment for prisoner inmates with anxiety, post-traumatic stress disorder (**PTSD**), etc. South Korea’s *Smart Glove*⁵⁰ is a unique example that shines in the virtual rehab category by using online gaming as an effective tool to support individuals enrolled in the rehabilitative programs.⁵¹

Aside of the aforementioned digital interventions for prison inmates in various countries, even telehealth and videoconferencing applications are increasingly

⁴⁶ G. C. Burdea, *Virtual Rehabilitation - Benefits and Challenges*, 42(5) *Methods Inf Med*. 519, (2003), <https://pubmed.ncbi.nlm.nih.gov/14654886/>; See also, J. M. Rogers et al., *Elements virtual rehabilitation improves motor, cognitive, and functional outcomes in adult stroke: evidence from a randomized controlled pilot study*, 16 *J NeuroEngineering Rehabil* 56, (2019), <https://jneuroengrehab.biomedcentral.com/articles/10.1186/s12984-019-0531-y#citeas>.

⁴⁷ *Id.*

⁴⁸ Adrian P. Mundt et.al., *Initiating Change of People With Criminal Justice Involvement Through Participation in a Drama Project: An Exploratory Study*, *Front. Psychiatry* (October 03, 2019), <https://doi.org/10.3389/fpsy.2019.00716>.

⁴⁹ SPRINGWISE, <https://www.springwise.com/prisoners-use-vr-programme-rehabilitation-tool/> (last visited Apr. 07, 2024, 06:25 PM).

⁵⁰ SPRINGWISE, <https://www.springwise.com/smart-glove-uses-online-gaming-rehabilitation/> (last visited Apr. 07, 2024, 06:57 PM).

⁵¹ SPRINGWISE, *supra* note 49.

being put to use to allow prison inmates access to a wider range of healthcare services and social service teams. In this regard, it is useful to study the example of video-based telecommunications technology being utilized by prisons in UK to conduct consultations between prison inmates and appropriate mental health practitioners and clinicians from within their communities or otherwise.⁵² On similar lines, even USA prisons have been using telehealth services, etc. to enable provision of healthcare services which are at a distance from the various specialty and non-specialty correctional facilities prevalent in the country.⁵³ Not far behind follows the example of Australia, Canada, etc., where telehealth services are being utilized to offer medical specialist support to some of the prisons which are located in rural and remote locations.⁵⁴

Overall, the era of smart rehabilitation is on the horizon where the world can look at an eerie yet astounding range of persuasive technologies that hold immense potential in successfully rehabilitating prisoners. However, it is dangerous to overlook the mind-altering nature of these technologies which are purportedly designed to modify mental states of prison inmates who are chosen for these smart rehabilitation programs. We must question this notion against the anvil of right to mental liberty and weigh it against the promising benefits these technologies seemingly harvest some of which shall be discussed in the next part.

⁵² Chantal Edge et. al., *Improving care quality with prison telemedicine: The effects of context and multiplicity on successful implementation and use*, 27(6) JTT 325, (2019), <https://doi.org/10.1177/1357633X19869131>; See also, P. Fallon, *Introducing telehealth to English prisons*, 3(1) IJPH 77, (2007), DOI: 10.1080/17449200601149262.

⁵³ Id; See also, R. K. Ax et. al., *Innovations in correctional assessment and treatment*, 34(7) CJ&B 893, (2007), DOI:10.1177/0093854807301555.

⁵⁴ H. Kip et. al., *eHealth in Treatment of Offenders in Forensic Mental Health: A Review of the Current State*, Vol.9 FP 42, (2018), DOI: 10.3389/fpsy.2018.00042; See, Lasnier et. al., *Implementing an Indoor Smoking Ban in Prison: Enforcement Issues and Effects on Tobacco Use, Exposure to Second-hand Smoke and Health of Inmates*, 102(4) CJPH 249, (2011), DOI:10.1007/BF03404042; See also, D. H. Sullivan, *Videoconferencing and forensic mental health in Australia*, 26(3) BS&Law 323, (2008), DOI: 10.1002/bsl.815. See also, Bureau of Justice Assistance (BJA), *Using Telehealth for Behavioral Health in the Criminal Justice System*, NCJ No. 255459, (2020), https://www.cossapresources.org/Content/Documents/BriefingSheets/Using_Telehealth_for_Behaviorial_Health.pdf

III. Impact on Re-offending & Recidivistic Behaviour

The Doha Declaration Global Programme, 2021 was adopted at the 13th United Nations Congress on Crime Prevention and Criminal Justice.⁵⁵ The framework was designed to pour spotlight on the significance of rehabilitation and social reintegration measures that support prisoners sew back into society as valued individuals. The Declaration styled its functional pillars on the prevalence of *fair, humane, and effective criminal justice systems*.⁵⁶ With the imminent and perpetual support of United Nations Office on Drugs and Crime (UNODC)⁵⁷, it was stated that prison management must move towards a more rehabilitative approach. A suggested route was pouring higher investments in advanced rehabilitative and allied programs for prisoners which would translate into a long-term strategy for saving costs by preventing re-offending, apart of other benefits to the individuals as well as the safety of public at large.⁵⁸

We must also turn to the umbrella protection guaranteed by the International framework under the Article 9(1)⁵⁹ of the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR) and Article 10(1)⁶⁰ of the Charter of Fundamental Rights of the European Union (ECFR) which provide for right to freedom of thought. Both of these documents also recognize and provide for *right to mental, psychological, and moral integrity*.⁶¹ The bounds of right to mental liberty, in theory also include right to psychological continuity, to cognitive liberty, and to mental self-determination.⁶²

⁵⁵ UNODC, <https://www.unodc.org/dohadeclaration/en/prisons/> (last visited Apr. 08, 2024, 02:33 PM).

⁵⁶ United Nations Information Service (UNIS), *Doha Declaration can catalyse world's efforts against crime, says UNODC Chief*, Press Release: UNIS/CP/841 dated May 15, 2015, <https://unis.unvienna.org/unis/en/pressrels/2015/uniscp841.html>.

⁵⁷ UNODC, *supra* note 55.

⁵⁸ UNIS, *supra* note 56.

⁵⁹ See the European Convention for the Protection of Human Rights and Fundamental Freedoms, Art.9 (1).

⁶⁰ See the Charter of Fundamental Rights of the European Union, Art. 10(1).

⁶¹ Andreas von Arnould, Kerstin von der Decken & Mart Susi (eds.), *The Right to Mental Integrity: From Part V - Autonomy and Integrity Rights*, The Cambridge Handbook of New Human Rights Recognition, Novelty, Rhetoric, 385, CUP 2020, DOI: <https://doi.org/10.1017/9781108676106>.

⁶² Harris DJ et. al., *Law of the European Convention on Human Rights*, NY:OUP, 2018 [ISBN: 9780198785163],

Notwithstanding the assumptive thread of arguments, the fact remains that there is no defined boundaries that can accommodate the scope of rights to mental, moral, and psychological integrity and its meaning equally remains unclear as of now. This makes both sides of arguments of frail, given the abstruse framework around the protection of mental liberty and what ramifications, if any, would be raised against persuasive technologies offering smart rehabilitation of prison inmates, especially where there is not practical threat to mental health.

In this context, let us jump to the work that PTs have been doing, weighing its many benefits against the international fora. In the briefest of such examinations, although arguably so, it can be said that persuasive technologies do hold a significant benefit in the domain of rehabilitative justice, their usage also challenges us with legal and ethical debates. It strikes at the anvil of *right to privacy and autonomy*, and questions the legal or moral leverage being weighed against *right to mental liberty* as charter to *right to freedom from interference* with one's mind.

It is often seen that prison inmates at the time of their release, leave the prison facility with a deteriorated physical and mental health condition in comparison to what their status had been at the time they were sent to prison for the first time.⁶³ This is a major cause that contributes to higher medical costs for these individuals when they are back in the outside world.⁶⁴ Ultimately this leads to lack of means and attitude to secure employment as well. In fact, studies show that most of the offenders who have been incarcerated once are likely to re-enter the criminal justice system within a tenure of five years from their release.⁶⁵ The ripple effect of this can be felt not only on the individual's physical and mental capacity to recover, but also on his or her family, the community as well as on every taxpayer whose money is said to be utilised in maintaining and running

<https://www.oxfordlawtrove.com/view/10.1093/he/9780198785163.001.0001/he-9780198785163>.

⁶³ Husain Aanis Khan, *Responsibility For A Prisoner's Health Doesn't End With Her Release From Jail*, TheWire (Dec. 16, 2021), <https://thewire.in/rights/responsibility-for-a-prisoners-health-doesnt-end-with-her-release-from-jail>.

⁶⁴ Sjors, *supra* note 12.

⁶⁵ Edgar, *supra* note 29.

these correctional facilities that are failing to rehabilitate these individuals.⁶⁶ To avoid this scenario, technological rehabilitative design has a promising solution.⁶⁷

Many of the persuasive technologies directedly cater to the deviant urge of individuals and formidably use techniques to modify the criminal mind. Based on the work of a Canadian psychologist, the Risk Needs Responsibility Model (RNR)⁶⁸ is used to rehabilitate individuals by influencing and modifying the thinking of criminal minds. The model derives its name from three principles of offender rehabilitation management: (i) Assessing Risk; (ii) Identifying Criminogenic Needs; (iii) Responsive Treatment of Criminogenic Need.⁶⁹

RNR program seeks to treat the offenders in many forms based on their individual characteristics and identified criminogenic needs but at its core it functions using several accredited and authorised rehabilitative criminal behaviour programmes.⁷⁰ These programs can run for durations suitable to the requirements of the individuals enrolled in such programs which means it could be a few weeks to several months, whichever best suits the rehabilitation requirements of the offender.⁷¹

Under these programs several role-playing scenarios have been provided to incite the flow of any individual's '*faulty thinking*' and to make him realise how he was

⁶⁶ Danielle Wallace & Xia Wang, *Does in-prison physical and mental health impact recidivism?*, 11 SSM - Population Health 1, (2020), <https://doi.org/10.1016/j.ssmph.2020.100569>.

⁶⁷ Bob Hampe, *A New Lens On Rehabilitation-Focused Technology In US Corrections*, SECURITY (Oct. 12, 2021), <https://www.securitymagazine.com/articles/96281-a-new-lens-on-rehabilitation-focused-technology-in-us-corrections> (last visited Apr. 07, 2022, 06:27 PM); *See also*, Mirko Bagaric, Dan Hunter & Colin Loberg, *Introducing Disruptive Technology to Criminal Sanctions: Punishment by Computer Monitoring to Enhance Sentencing Fairness and Efficiency*, 84 BROOK. L. REV. 1227, (2019), <https://dx.doi.org/10.2139/ssrn.3345873>.

⁶⁸ Government of Canada, *Risk-Need-Responsivity Model For Offender Assessment And Rehabilitation 2007-06*, Public Safety Canada (Jan. 01, 2018), <https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/rsk-nd-rspnsvty/index-en.aspx>.

⁶⁹ *Id.*

⁷⁰ *Id.*; *See also*, BOB, *supra* note 67.

⁷¹ GOVERNMENT OF CANADA, *supra* note 68.

led to committing crime in his or her past.⁷² The program then suggests alternative behavioural responses that could help them in similar situations in the future. Such technological innovations have a long way to go in addressing the recidivistic patterns in different individuals.⁷³

Rehabilitative technologies include one – ‘offender electronic messaging system’⁷⁴ which allows for flow of communication to approved list of people and prison personnel, whether internally or externally situated. It does so by offering certain pre-loaded messaging templates and images that prison inmates can select and communicate to their kin per their requirement; along with also offering audio to text feature.⁷⁵ These communication modules provide a strong linkage between prison inmates and the outside world. Positive reinforcement goes on to play a key role in substantially scaling down re-offending rates.⁷⁶

Several studies have concluded that re-offending is significantly curtailed when prison inmates have been in continuous psychological and emotional support to get through their prison term and are less likely to succumb to their criminogenic needs.⁷⁷ Technological know-how along with the confidence of having interacted with technology on several levels and occasions, gives them a chance at more

⁷² Jill Viglione, *The Risk-Need-Responsivity Model: How Do Probation Officers Implement the Principles of Effective Intervention?*, 46(5) Cr.J&B 655, (2018), <https://doi.org/10.1177/0093854818807505>.

⁷³ *Id.*

⁷⁴ INMATE MESSAGING, <https://www.gtl.net/correctional-facility-services/communication-solutions/inmate-messaging/> (last visited Apr. 07, 2022, 06:27 PM); See also, National Law Enforcement and Corrections Technology Center, *E-Messaging Saves Time, Improves Security*, TechBeat (Summer 2008), <https://www.ojp.gov/pdffiles1/nij/nlectc/223627.pdf>.

⁷⁵ JILL, *supra* note 72.

⁷⁶ Core Systems, *Offender Self-Service: Technology In The Hands Of Offenders*, <https://coresystems.biz/downloads/OffenderSelf-ServiceWhitePaper.pdf>.

⁷⁷ WANG, *supra* note 66; See, HANNEKE, *supra* note 54; See also, D. H. Sullivan, *Videoconferencing and forensic mental health in Australia*, 26(3) BS&Law 323, (2008), DOI: 10.1002/bsl.815. See also, Bureau of Justice Assistance (BJA), *Using Telehealth for Behavioral Health in the Criminal Justice System*, NCJ No. 255459, (2020), https://www.cossapresources.org/Content/Documents/BriefingSheets/Using_Telehealth_for_Behaviorial_Health.pdf

effective social integration where they do not feel that they no longer belong to a world which left them behind in its evolution.⁷⁸

A less controversial technology that can help reduce recidivism is by utilising Real-Time Locating Systems (**RTLS**)⁷⁹ for those individuals who are being finally released back to the society with the aim of reintegrating and becoming a functional, law-abiding citizen. RTLS is a 1-on-1 approach to rehabilitation that encourages frequent drug tests, regular check-ins by individuals, and timely sent progress reports by the individuals under this system.⁸⁰ Using this technique, the Swedish Prison and Probation Project reported to have substantially contracted its recidivism rates from 42% to 29% in a matter of few years.⁸¹

Besides these direct impacts, it may result in indirect effect on other inmates too who may not have participated in the program due to their personal inhibitions.⁸² Witnessing positive reinforcement and the reward it entails would create a cyclic reinforcement of positive behaviour by promoting a reward system and encouraging people to participate and engage in the rehabilitative activities.⁸³

A loop of positive reinforcement is seen not only on the individuals vide the usage of assistive technology in its dual charges, but also holds a promising scope for usage by the administration who can also be beneficiaries of the indisputable ripple effect such usage would entail. But the application and its effect cannot be detached from the established principles of law. Thus through this part, the researchers wish to highlight how the legislature and judiciary must amplify the debate and question the scope and need of incorporating within the ambit of right to mental liberty, provisions of right to psychological continuity, to cognitive

⁷⁸ C. McDougall, D. Pearson, D. Torgerson & M. Garcia-Reyes, *The Effect Of Digital Technology On Prisoner Behavior And Reoffending: A Natural Stepped Wedge Design*, Vol. 13 No. 4 JECr P455-482, (2017), <https://doi.org/10.1007/s11292-017-9303-5>; See also, C. McDougall & D. Pearson, *Technology As A Means Of Rehabilitation: A Measurable Impact On Reducing Crime*, in T. Holt & A. Bossler (eds), *The Palgrave Handbook of International Cybercrime and Cyberdeviance*, (2020), https://doi.org/10.1007/978-3-319-90307-1_71-1.

⁷⁹ QUICSOLV, <https://www.quicsolv.com/internet-of-things/rtls-real-time-location-system/> (last visited Apr. 18, 2024, 06:58 PM).

⁸⁰ *Id.*

⁸¹ Hampe, *supra* note 67.

⁸² *Id.*; See also, Quicsolv, *supra* note 79.

⁸³ *Id.*

liberty, and to self-determination. The right to second chance would be incomplete without the availment of the rights to privacy, right to data protection, right to be forgotten, right to erasure or be delisted. In the absence of these rights, the society might end up discriminating and acting against such individuals on preconceived prejudices against people who have been convicted and been to jails. Their rehabilitation is incomplete if the prison authorities fail to equip them with digital literacy and their re-integration would fail in case their criminal records are freely accessible by any person or organisation without any qualified conditions.

IV. Conclusion

Through this research study of rehabilitative regime being assisted by ICT, automation and persuasive technologies, the researchers have tried to launch a label on the need for India to change its rehabilitation regime and draw focus on the impact of technology being used as a tool for rehabilitation in other jurisdictions. The research study shows how AI and ICT have been effectively used in multiple forms and formats, through a range of rehabilitative programs to provide what can be best termed as digital rehabilitation, smart correction, and smart rehabilitation.

The question that the world is faced with today finds its heart in the evolution of Internet of Things (**IOT**)⁸⁴. It cannot be denied that the technological ecosystem continues to surge and expand and every device of the modern day can duplicate as a smart device with potential sensors. But how far is the global regime willing to take the innovating in technology to better the lives of the social outcasts and whether rehabilitation-focused technological environment requires the diversion of so many resources of the world. On a more objective front, the research study has delved deep into its vast positive impact and the role it can play in furthering good in the society if technology is deployed with the intention to do good.

⁸⁴ Volkhard Klinger, *An IoT-Based Platform for Rehabilitation Monitoring and Biosignal Identification*, Research Anthology on Rehabilitation Practices and Therapy, Vol. 4 IGI Global (2021), [ISBN13: 9781799834328].

Today we see on a global scale, there is a fortification of digital prisons⁸⁵, and an incessant rise in data mining of prison calls, etc.⁸⁶ This can turn into a breeding ground for violation of privacy, breach of data protection, infringement of mental and psychological liberty, etc. These components need a separate discussion. A question that still lingers the mind is with regard to existence of Internet of Medical Things (**IoMT**). While there is an overhanging threat to violation of right to mental liberty and autonomy, right to privacy and data protection, even if right to erasure or right to be delisted is granted by the courts of law, would partaking in rehabilitative programs that use persuasive technologies, form part of permanent medical records given some programs might need medical evaluation and aim at altering psychological and behavioural health. Although jury may be still out on interface of IoMT with rehabilitative justice, any regime that implicates an individual's privacy must be made subject to the same standards of privacy and data protection regime as have been inherited and developed from international jurisprudence.

The researchers also recognise numerous barriers which currently restrict extensive implementation of these smart rehabilitative technologies. These include severe paucity of funds, insufficient infrastructure and staffing, disruptive political ideologies, apprehensions around safety and security, and trepidation of general public and criminal justice professionals alike. Regardless of these hurdles facing the widespread onset of smart rehabilitative technologies, there is a surge in success stories across the global rehabilitative justice systems. This does indicate towards the wave of digital transformation setting its tone on this sector as well. Should these technologies continue to be optimally effective across the globe, there will be an urgent need to upscale the existing infrastructure and train the staff to understand and effectively implement the nuances of the advanced rehabilitative program.

⁸⁵ Todd Feathers, *'They Track Every Move': How US Parole Apps Created Digital Prisoners*, The Guardian Digital Citizens (March 04, 2021), <https://www.theguardian.com/global-development/2021/mar/04/they-track-every-move-how-us-parole-apps-created-digital-prisoners> (last accessed on April 16, 2024 at 8:35PM).

⁸⁶ Chris Francescani, *US Prisons And Jails Using AI To Mass-Monitor Millions Of Inmate Calls*, ABC News (Oct. 25, 2019, 12:20 AM), <https://abcnews.go.com/Technology/us-prisons-jails-ai-mass-monitor-millions-inmate/story?id=66370244>.

While a bird's eye view narrates how even with the ongoing researches, multiple criminal justice systems are already being supported by smart rehabilitative technologies globally, it cannot be denied that there is a substantial gap in implementing these into uniform standard practice especially in less advanced jurisdictions. Although there is no denying that introduction of digital technology offers not only advantages to the inmates and ex-convicts, but also to the prison staff by increasing its efficiency, and allowing resources to be better engaged. The higher is the rate of rehabilitation, the safer the society gets.

While this is merely an academic assessment, this study splits open the scope of a quantitative and qualitative research to study the impact of smart rehabilitative technology in the short and long term. Another gap that could be identified and leaves scope of further excavation is that research literature was dominated by studies conducted in prisons of UK, Ireland, USA, Canada, Sweden, Norway, Australia. There was a dearth of research in the South Asian region which allows significant scope to conduct a study in the subcontinent of India and reflect the impact and myriad benefits use of technology as a means of criminal rehabilitation.

When it comes to India, the rich sub-continent on paper seemingly believes in reformation and reintegration as the way forward, however the ground reality remains far different. The nation still boasts off grand prisons like Cellular Jail (Kaala Paani) of Port Blair, Puzhal Central Prison, Chennai, etc. which still believe in the idea of social exclusion as a means of furthering the ends of a penitentiary system, having punitive and retributive form, which is incompatible with the shielding of human dignity as guaranteed under the Constitution of India. The harsh truth is that the prison management in this nation remains a stunning example of a system that is opaque, archaic, and rife with abuses at every functional level.⁸⁷

⁸⁷ Parikshit Goyal & Kamesh Vedula, *Understanding Open Prisons in India*, 56(4) EPW, (2021), <https://www.epw.in/engage/article/understanding-open-prisons-india>. See also, Chandrahas Choudhury, *'Confessions of a Tihar Jailer': secrets of India's most notorious prison laid bare in memoir*, The National News (Mar. 28, 2020) <https://www.thenationalnews.com/arts-culture/books/confessions-of-a-tihar-jailer-secrets-of-india-s-most-notorious-prison-laid-bare-in-memoir-1.998340>; See also, AJ Prabal, *Tihar 'Ashram' was the worst of the six prisons with a 'Bladebaaz gang' roaming inside*, National Herald (Mar. 20, 2021, 5:30PM),

Technological rehabilitation as adopted by many advanced jurisdictions holds the promise of changing the peno-correctional institutions to more effective regimes that stem from a more humanistic approach to reforming offenders. They have also proved to be more synchronized with human rights principles than the harsher conventional forms of incarceration. Even the Constitution of India in its Part IV, Directive Principles of State Policy (DPSP) makes the State responsible for promoting welfare of all citizens by ensuring socio-economic justice by minimising inequalities in facilities and opportunities.⁸⁸ This enables the State to not only run a technologically charged rehabilitative program from a human dignity point of vision but also to tackle the problem of digital divide that directly affects their ability to secure employment. This is why the need for digitization of prisons is growing and gaining international support.

Review of available literature abundantly showcases that at present India's focus in utilizing any AI or ICT is either in enabling for justice system outside of prisons, like digitalizing court rooms, making records available online, filing cases online, etc., or focused on strengthening and expanding surveillance measures. This is not the fulfilment of the reformative regime unless the attention is given to digitization in the rehabilitative regimes to help prison inmates as well. Even in 2018, the government had announced it was launching an e-prisons project with the aim to enhance prison management through digitalisation.⁸⁹ This has reportedly been a failed project of the government with no concrete flagship steps towards achievement of the same and thus, most of the issues still prevail till date.⁹⁰

<https://www.nationalheraldindia.com/reviews-recommendations/tihar-ashram-was-the-worst-of-the-six-prisons-with-a-bladebaaz-gang-roaming-inside>.

⁸⁸ Constitution of India, 1950, Part IV, Art. 38, 39 & 41.

⁸⁹ Press Information Bureau, *Prison Modernisation Reforms*, MHA GOI Notif. dated Feb. 06, 2018 at 4:40PM, <https://pib.gov.in/newsite/PrintRelease.aspx?relid=176237>. E-prisons project was introduced to conjoin with the Prisoner Information Management system (PIMS), which was built by National Informatics Centre. The system was developed with a promise to enforce a centralized approach that would record and manage prisoner information while it also generates reports. This would make it easy to track the status of prisoners and allow for smooth functioning of the prison system.

⁹⁰ Armanur Rahman, *Promise: Modernising The Prison System With Technology And Infrastructure*, The Caravan, <https://caravanmagazine.in/modimeter/police-reform/prison-system>. The E-prisons project for most parts solely depends to create a portal for prisoners' details, applications for visitation, biometric details, sentence status,

Most importantly, the usage of emerging technology for rehabilitation of offenders allows for the scope of waning of recidivism rate of prison inmates once they are released back into the society given, they would be equipped to reintegrate in the society that requires technological know-how. In fact, social stigma often stems from the fact that prisoners are seen as social ailments who have simply served time inside a prison facility without undergoing and moral or psychological transformation. This gives way to social jeopardy. Once the public is made aware of the many benefits and outcomes of the persuasive technologies being used in rehabilitative program, they would begin to have more trust on the released individuals post successful completion of their program. This symbiotic acceptance would also curb further incidence of recidivism.

To sum up, interface of technology with the rehabilitative justice system will be nothing short of a positively pragmatic explosion. It will be a change that the current justice system needs and a change that has proved its superiority over the more conventional forms of incarceration in the more advanced jurisdictions. Technological rehabilitation presents itself as a more holistic response to ensure successful reintegration of the prison inmates upon their release. That said, the success of the whole suggested venture is ultimately contingent upon the dedication and commitment with which the State devotes its time, energy, and resources in making this technologically infused reformatory institutions a triumphant story. When the faith of the society in these institutions takes firm root, only then is one assured of the true reintegration of these prisoners.

etc., and fails to address the larger issues plaguing the Indian prison system like resource management, overcrowding, etc.